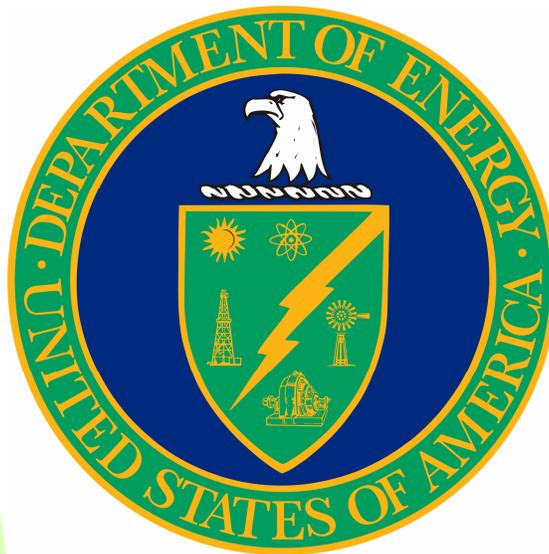


***National Nuclear Security  
Administration Nevada Site Office  
Technical Qualification Program  
Accreditation Review Team Report***



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

**July 12-15, 2010**

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## **EXECUTIVE SUMMARY**

The Technical Qualification Program (TQP) establishes a process to objectively determine if 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. This program 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.

The purpose of this evaluation was to conduct a thorough, independent evaluation of the status of the implementation of the National Nuclear Security Administration (NNSA) Nevada Site Office (NSO) TQP. This report documents the activities and results of the Accreditation Review Team evaluation of the NSO 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 an effective program for ensuring the technical capability of NSO 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 NSO has made significant progress over the past year to implement an effective TQP. Although there were weaknesses (Areas for Improvement) noted by the team, some of these had been self-identified by NSO during previous self- assessments.

The Accreditation Review Team concluded that NSO has established most systems and processes necessary to ensure the technical capability of DOE technical employees whose responsibilities require them to provide assistance, guidance, direction, oversight, or evaluation of contractor activities. The Accreditation Review Team noted that the NSO staff has the appropriate set of technical competencies to perform their 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 NSO.

However, a number of issues remain related to the TQP, some significant, and NSO has work remaining to remedy those issues. Many of these issues will require additional NSO evaluation efforts beyond that done by the Accreditation Review Team.

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

### **Strengths**

- The documentation of work experience, developmental activities, training, and/or self-study activities directly under each competency on the qualification cards provides a clear basis of competence for the Qualifying Official (QO), Supervisor, FTCP Agent, and/or an assessor evaluating a candidate's technical qualification.
- NSO requires all employees (including those outside the TQP) to complete the site-specific qualification standard.
- The level of engagement of NSO senior management in the implementation of the TQP is noteworthy.

### **Areas for Improvement**

- Qualifying officials are not consistently implementing the qualification process and expectations outlined in the NSO Technical Qualification Program Plan.
- The Technical Qualification Program Plan contains no process for identifying facility or site-specific qualification competencies.
- Designees have not been formally assigned by the Site Office Manager to implement requirements such as those related to verification of competencies, and final qualifications in key qualification (e.g., Senior Technical Safety Managers (STSM)).
- The roles and responsibilities of the designated FTCP Agent, who is not yet a fully qualified STSM, is not rigorously implemented.
- There is no documented evidence of compensatory measures and duty limitations for STSMs who have not completed qualifications.
- There is not a consistent and clear understanding on the part of the TQP participants and QOs on the application and definition of equivalencies.
- The lack of objective evidence supporting competency evaluations for some legacy records impacts transportability.
- Facility Representative (FR) requalification is not in accordance with the requirements of DOE O 426.1A as described in DOE-STD-1063-2006.
- FR continuing training (listed as a strength in the FR self-assessment in 2009) is no longer being implemented to meet the continuing training requirements described in DOE-STD-1063-2006.

- The issues from the NSO TQP Accreditation Self Assessment in 2009 were not fully analyzed, and a number of corrective actions have not been effectively implemented.

## INTRODUCTION

The Technical Qualification Program (TQP) establishes a process to objectively determine if 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. The 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) Nevada Site Office (NSO) TQP by the TQP Accreditation Review Team.

The Accreditation Review Team conducted the review in accordance with the *Nevada Site Office Technical Qualification Program (TQP) Accreditation Review Plan* and TQP accreditation review schedule that were developed for this review. These documents followed the requirements, objectives, criteria and guidance provided in DOE O 426.1-1A, *Federal Technical Capability*.

The “Results” section of this report summarizes the status related to each objective, including how the objective is met, and identifies any strengths or areas for improvement. Detailed results of the assessment of the individual criteria for each objective can be found in Appendix A of this report. The review was led by Ray Corey of the Richland Operations Office with assistance from qualified team members from across the Department. Team member assignments for each of the objectives are captured below.

### TEAM LEADER

Ray Corey, Richland Operations Office  
Advisor – Mike Schoener (technical support)

<b>Demonstration of Competence</b>	<b>Competency Levels</b>	<b>Plans and Procedures</b>	<b>Qualification Tailored to Work Activities</b>
Denise Webb, NNSA-SC	Mark Alsdorf, NNSA-SC John Krepps, LASO	Ed Parsons, DOE-RL Edna White, NNSA-SC	Mark Alsdorf, NNSA-SC John Krepps, LASO
<b>Credit for Existing TQP</b>	<b>Transportability</b>	<b>Measurable</b>	
Denise Webb – NNSA-SC	Edna White, NNSA-SC	Ali Ghovanlou, HS-10 Bob Seal, DOE-ID	

## **SCOPE AND METHODOLOGY**

The overall approach of the TQP Accreditation Review Team Evaluation of the NSO TQP was to evaluate the personnel, procedures, and management control systems that demonstrate an effective program for ensuring 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:

- reviews of NSO policies, procedures, and other documents that support the TQP;
- interviews of NSO management and technical personnel in the TQP;
- walk-down of a major facility, and
- assessment of the adequacy of the NSO Self-Assessment for accreditation.

### **Conduct of the Evaluation**

This evaluation was a disciplined, systematic, documented examination of the personnel, procedures, and management control systems in place to ensure the technical capability of applicable DOE technical employees.

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 Team Leader conducted required accreditation training for the Team prior to the start of the 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 any strengths, 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 NSO 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.***

NSO O 426.1 (referred in this document as the NSO TQP Plan or TQPP), dated February 2010, defines a process for determining TQP applicability for new or vacant positions and for changes to existing positions or incumbents. A Memorandum signed by the FTCP Agent clearly identifies all TQP participants and their associated qualification areas. TQP qualification status is tracked by the TQP Manager on a TQP Monthly Status Report to inform participants about their responsibility to attain, maintain qualification and to make the process visible to NSO management. The Team reviewed the records for TQP participants who are recent hires and those who were reassigned to a new Functional Area Qualification Standard and found full agreement with NSO's process for evaluating TQP applicability. The process used to evaluate changes to existing positions for TQP applicability is also clearly described in the NSO TQPP and requires the supervisor to complete a Position Evaluation Questionnaire (PEQ) and concurrence by the FTCP Agent.

Individual Development Plans (IDPs) were reviewed to ensure training and/or job assignments have been identified to reflect activities needed to support initial TQP qualification or to ensure continued proficiency associated with maintenance of TQP qualification. Most IDPs reviewed appropriately identified activities associated with the individual's TQP. Training records were also reviewed and it was determined that identified training activities appropriately reflect the commitment towards TQP initial qualification or continued proficiency.

The NSO TQP Plan outlines a tiered approach towards achieving technical qualification commensurate with the responsibilities of the position. All TQP participants must complete the GTB, a FAQS, and applicable Site/Facility/Position-Specific qualification standards. Once the qualification cards are complete, all candidates must successfully pass a comprehensive written exam (with a score greater than 80%). STSMs will also either successfully pass an evaluated walkthrough or an oral board examination by a qualified STSM or qualification board with at least one STSM. There is comprehensive guidance in the NSO TQPP on how to develop, conduct and evaluate evaluated facility walkthroughs and oral board examinations. Written

examinations results were reviewed and found to be compliant with the program requirements as well as oral board records. Facility representatives must successfully pass both an evaluated walkthrough and an oral board examination. Safety System Oversight staff must successfully complete a facility evaluated walkthrough.

Several qualification cards were reviewed to ensure a consistent and rigorous implementation of requirements for qualification as described in the NSO TQPP. However, it was found that updated NSO TQP Program requirements were not retroactively applied to TQP candidates who qualified under the prior Program. The Team could not assess the rigor of this program due to lack of sufficiently detailed legacy records as discussed further under Objective 6. A strength associated with NSO's qualification process is the requirement to document work experience, developmental activities, training, and/or self-study activities directly under each competency on the qualification cards as documented evidence for the QO. All evidence used for qualification activities are required to be documented in the participant's records but documenting the basis for completion of a competency within the qualification card itself provides one place for the Supervisor, FEM, FTCP Agent and/or an independent assessor to determine how the competency was deemed satisfied. However, based on the team's review, the quality of some of the documentation as a basis for the competency is weak.

NSO TQPP requires all QOs to complete orientation training and be briefed by the Agent on the expectations of the program. As part of the Corrective Action Plan from NSO's TQP Self-Assessment conducted in 2009, training on the QO responsibilities with respect to evaluating equivalencies and documenting attainment of competencies was provided via classroom training. However, based on the QO interviews conducted, there is a clear inconsistency of understanding related to the documentation requirements for competency evaluations along with a misunderstanding of the definition and application of equivalencies. The equivalency issue is addressed and documented under Objective 5.

#### Area for Improvement

AFI-1-1: Qualifying officials are not consistently implementing the qualification process and expectations outlined in NSO Technical Qualification Program Plan.

#### Strength

S-1-1: When done appropriately, the documentation of work experience, developmental activities, training, and/or self-study activities directly under each competency on the qualification cards provides a clear basis of competence for the QO, Supervisor, FTCP Agent, and/or an assessor evaluating a candidate's technical qualification.

#### Noteworthy Information

N-1-1: Tracking of the PMCDP, GTB, and appropriate Site/Facility qualifications of Federal Project Directors responsible for defense nuclear facilities should be added to NSO's TQP Monthly Status Report.

N-1-2: The process used for determining TQP applicability as documented in the NSO TQPP is inconsistent with the Position Evaluation Questionnaire (PEQ). The process requires the determination of the functional area to be made after the PEQ form is completed and concurrence by the FTCP Agent that the position is applicable to the TQP. However, the PEQ form requires the supervisor to indicate the functional area assigned. This minor discrepancy should be clarified to ensure the process for identifying TQP participants is consistently applied.

N-1-3: NSO TQP Program requirements were not retroactively applied to TQP candidates who qualified under the prior Program.

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

A review of selected qualification standards indicates the General Technical Base Qualification Standard (GTBQS) and Functional Area Qualification Standards (FAQS) form the basis for the NSO Technical Qualification Program (TQP). In those cases where site- and facility-specific qualification standards have been developed, the competencies contain adequate and appropriate knowledge, skills and ability statements.

Interviews with the TQP Program Manager and Training Support Services Contractor indicate that site office subject matter experts (SMEs) participate in FAQS reviews and revisions requested in support of FTCP. According to the TQP Program Manager some of these SMEs are also involved in the development of the NSO site- and facility-specific qualification standards. With the TQP Program Manager serving as the facilitator, site personnel also are given the opportunity to review and verify the quality of these qualification standards.

In response to TQP Accreditation Self-Assessment of October 2009, NSO performed a “*Summary-Level Job Analysis for NSO TQP Positions*” and concluded that appropriate position/site/facility qualification standards have been established. However the Accreditation Review Team was not able to confirm this conclusion because of a lack of documented evidence and availability of supporting analysis. A review of existing standards and interviews concluded that the NSO site- /facility-specific qualification standards did not cover a number of potentially relevant areas (see Objective 4 for detail).

Certifications and licenses, such as Certified Health Physicist and Professional Engineer, are encouraged and considered in competency completion. The NSO Technical Qualification Program Plan, NSO O 426.1, provides for consideration of employee competencies based on professional certifications/licenses. Interviews with various managers confirmed these facts. In addition, a representative sampling of training records found evidence of certifications and

licenses in several files and on several qualification cards, indicating the incorporation of professional certifications and licenses in the qualification program.

At NSO, technical discipline competency is demonstrated through completion of the applicable FAQs, as supported by sampled training records. Office/facility/position specific qualification standards have been completed for FRs and Safety System Oversight personnel.

NSO implemented a *Site Specific Technical Qualification Standard* in October 2009. To ensure familiarity-level knowledge of key topics, the NSO Management System Steering Panel identified 13 competencies covering 11 local directives, various charters, and emergency plan. All TQP participants, and some employees outside the TQP, are required to complete this qualification standard. The requalification frequency for this qualification standard is established as every three years. Requiring employees outside of the TQP to complete this standard demonstrates an increased level of management commitment to training and qualification.

### Strength

S-2-1: NSO site-specific qualification standard must be completed by all employees including those outside the TQP.

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

NSO senior management demonstrates a strong commitment to the Technical Qualification Program (TQP) through active participation in TQP activities. Senior management is highly engaged in qualification activities, including serving as qualifying officials, chairing oral evaluation boards and leading facility evaluated walkthroughs. Senior management is also involved in deliberations leading to selection of TQP candidates and their qualification. On a quarterly basis, the progress of TQP implementation is presented to senior management and programmatic issues are discussed. Additionally, the current NSO manager has an in-depth understanding of NNSA's commitment to the federal technical capability program and its requirements due to his prior service as a Federal Technical Capability Agent.

Interviews confirmed that NSO senior management is fully committed to the NSO TQP and fully recognizes their accountability for the implementation of the NSO TQP. Additionally, NSO senior management has clearly demonstrated that they take their responsibility for implementation of a TQP that produces a competent technical workforce, very seriously.

A comparison of the NSO Technical Qualification Program Plan with DOE O 426.1 (Federal Technical Capability) reveals that the NSO has adequately incorporated the majority of the applicable requirements in its plan. Several areas where the flow-down of requirements was not explicit, such as those addressing how to provide remedial support to individuals who fail

qualification exams, were discovered in the comparison. In practice, to deal with such issues and to ensure that all applicable requirements are included, NSO uses its Plan as a supplement to DOE O 426.1, and the NNSA's supplemental directive NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facilities*. The Accreditation Review Team also discovered qualification requirements in the *Safety System Oversight Program Manual* and the *Facility Representative Procedure*. Dispersing TQP requirements through numerous documents is a potential source of confusion by users and organizations and could weaken or delay implementation.

Another important requirement of DOE O 426.1 is the development of a process to determine needed office/site/facility specific technical competencies for the individual positions. The NSO TQP Plan contains no documented process for identifying facility or site specific qualification competencies.

NSO has in place an intranet TQP webpage that organizes the supporting DOE and NNSA documents, QO and equivalency forms, selected training materials and other information for ease of access by the TQP participants. The webpage is available to all TQP participants. The information presented on this webpage was found to be accurate, informative and up-to-date.

DOE O 426.1 requires the FTCP Agent to be a fully qualified STSM. The NSO Manager has designated the Assistant Manager for Safety and Security (AMSS) as the FTCP Agent. AMSS is currently pursuing STSM qualification and is not yet fully qualified. For this reason, the NSO Manager, through a memorandum to the FTCP Chair, has limited AMSSTQP duties as a compensatory measure including restricting his approval authority for qualifying other STSMs. Review of the qualification records revealed three deficiencies in relation to this situation: (1) the AMSS had recently signed a qualification card for an STSM candidate, (2) the Team did not find any evidence that a fully qualified STSM has approved the equivalency for a competency in AMSS Qualification card, as is required by NSO TQP Plan, and (3) the AMSS does not have a scientific or engineering degree as required for STSMs. NSO has not yet initiated the Equivalency/Exemption process of DOE O 251.1C to resolve this issue.

As per DOE O 426.1, the FEM is personally responsible for a number of tasks in the implementation of TQP (such as designation of positions/ individuals participation, candidate qualification, and guidance development) unless these tasks are formally delegated. Many of these tasks are being performed by subordinates but have not been officially delegated per NSO requirements.

From interviews, it was determined that NSO staff generally understand the expectations of the program and implement the program as required. However it is not clear that the NSO staff clearly understand the roles and responsibilities of the NSO FTCP Agent in the TQP. Additionally, the execution of the qualifying official duties during the evaluation of some candidates was not being performed as expected. In two cases, contrary to training provided by the TQP coordinator, the QO provided mentoring of the subject matter during the evaluation of a candidate. Based on interviews with QOs, some understood the process and requirements for

evaluation while others did not. This issue is a continuation of the NSO TQP self assessment finding.

The NSO TQPP prescribes the requirements pertaining to the control and retention requirements for documents pertaining to the NSO TQPP. A review of the NSO TQPP participants training record summary sheets indicate that training is being requested by TQP participants and completed. A Continuing Training Program (CTP) Progress Tracker lists the individual training requirements for each year, and is used to record progress toward completion of the annual CTP requirements.

The NSO TQPP, also states that the documents generated by the NSO TQP will be controlled and retained according to the requirements established by DOE O 360.1B. The Enterprise Training Services (ETS) has the overall responsibility for maintaining individual training files. The NSO Senior Training Support Services Contractor provides copies of the completed Qualification Card to the Learning Center Career Development Department which forwards input to the ETS for the official training files. During the interview with the NSO TQP Manager, NSO has not validated whether the NSO TQP records were received by the ETS and filed in the individual TQP training file. The issue of ETS maintaining TQP records is an ongoing issue that was identified in previous TQP Accreditation Reviews and has not yet been corrected by the Federal Technical Capability Panel.

#### Area for Improvement

AFI-3-1: NSO Technical Qualification Program Plan contains no process for identifying facility or site-specific qualification competencies.

AFI-3-2: Designees have not been formally assigned by the Site Office Manager to implement requirements such as those related to verification of competencies, and final qualifications in key qualification e.g., STSM.

AFI-3-3: The roles and responsibilities of the designated FTCP Agent, who is not yet a fully qualified STSM, are not always rigorously implemented.

#### Strength

S-3-1: The level of engagement of the NSO senior management in the implementation of the TQP is noteworthy.

#### Noteworthy Information

N-3-1: The multiplicity of documents that contain TQP implementation requirements could cause confusion amongst the users.

N-3-2: The placement of useful information on a TQP webpage that is accessible to the TQP participants and other individuals with duties within the NSO TQPP is noteworthy.

N-3-3: The duties of a qualifying official in competency evaluations need to be re-emphasized to assure a consistent and rigorous approach.

N-3-4: The roles and responsibilities for records management, between field organizations and ETS, is not clearly defined, implemented. This is considered an FTCP issue. (See Sandia Site Office and NNSA Service Center Accreditation Review reports for further information.)

***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 site office TQP utilizes Functional Area Qualification Standards (FAQSs) prepared by recognized DOE SMEs and approved by the FTC Panel. These standards provide the basis for the NSO program.

NSO produced a Summary-Level Job Analysis for NSO TQP Positions in February 2010 in response to a finding in *The TQP Accreditation Self-Assessment Final Report*, to identify positional needs for site-specific competencies. The result was a documented list of NSO positional site- and/or facility-specific qualification cards and standards for each NSO TQP position. See objective 2 for additional discussion.

FAQSs developed by the Federal Technical Capability Panel are used by NSO as part of their TQPs. The FAQSs include Department-wide job-specific requirements related to the rules, regulations, codes, standards, and guides necessary to carry out the mission of the office.

A review of selected site- and facility-specific qualification standards and an interview with the NSO TQP Program Manager confirm that facility and site procedures were considered for inclusion when determining competency requirements. The Summary-Level Job Analysis for NSO TQP Positions validated previous positional analyses and the resulting site- and facility-specific qualification standard competencies (see objective 2 of this assessment).

A review of NSO site- or facility-specific qualification standards indicated that the following topics were not covered:

- Contractor institutional procedures (e.g. Stop Work Order, Lockout/Tagout, Quality Assurance, Integrated Safety Management, Environmental Impact Statement, etc.)
- NSO Facility Representative Program
- ES&H requirements of the operating contract(s)

- Use of elevated position-specific competencies (working or expert level) for selected positions (e.g. Nuclear Safety Specialist, Quality Assurance, Emergency Management). A specific example is that NSO does not currently have a qualification standard that includes working or expert level of knowledge competencies for documented safety analysis or technical safety requirements as implemented at NSO.

Additionally, site- and facility-specific qualification standards only employ a limited use of “practical factors” to ensure mastery of skills and abilities identified for a competency, and do not address such things as approve ORPS corrective actions, attend critiques, observe facility rounds and shift turnover, develop/deliver training.

The NSO Technical Qualification Program Plan, NSO O 426.1, establishes an 18-month completion requirement for individuals assigned the GTBQS, appropriate FAQs, and site- and/or facility-specific qualification standard. This is expressed to participants via the qualification card and an initial orientation to the program.

A review of qualification records for NSO STSM positions identified 4 of 5 STSMs in initial qualification did not have documented evidence of compensatory measures and duty limitations, as required by DOE O 426.1, 4.b(6)(e), Compensatory and Alternative Measures. These included the Assistant Manager for Environmental Management, the Deputy Assistant Manager for Security, the Acting Deputy Assistant Manager for Safety, and the Deputy Assistant Manager for National Security.

#### Areas for Improvement

AFI-4-1: There is no documented evidence of compensatory measures and duty limitations for STSMs who have not completed qualifications.

#### Noteworthy Information

N-4-1: Content areas are missing in some of the site- and/or facility-specific qualification standards.

N-4-2: Site- and facility-specific qualification standards only employ a limited use of practical factors.

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

The NSO TQP Plan allows for the use of equivalencies or “credit” for previous education, training, experience and/or certification and NSO has made extensive use of equivalencies in their TQP. The NSO TQP Plan requires a candidate to identify equivalencies or gaps during their self-assessment as part of the initial qualification process. Equivalencies are required to be documented on the NSO Competency Equivalency Evaluation Form which is submitted with an

objective evidence package for review and concurrence by a QO. The QO is supposed to evaluate the competency requirements on the qualification card against the objective evidence package and document the results of this evaluation on the Form. If the QO concurs that the equivalency satisfies the skill and knowledge statements associated with the competency, the QO signs the applicable competency on the card and provides the signed Form to the TQP Program Manager. This process, when effectively implemented, will provide a high level of rigor, scrutiny and assurance that equivalencies are granted when appropriate and with a clear basis that would ensure candidate qualifications are transportable.

There are numerous qualification cards for NSO TQP participants that used EQ or Equivalency as the basis for meeting a competency. As acknowledged in NSO's TQP Accreditation Self-Assessment, documentation that the QO verified the objective evidence for many of these equivalencies is lacking. The corrective actions taken in response to this issue from NSO's TQP Accreditation Self-Assessment included adding a new form, the Competency Equivalency Evaluation Form, and training QOs on the process to be followed when evaluating equivalencies. No corrective actions were taken to reevaluate prior equivalencies granted for TQP participants. The lack of verified objective evidence for prior equivalencies is an issue with the potential to affect transportability of NSO's TQP as discussed in Objective 6.

In several instances of equivalencies assessed since the NSO TQP Program Plan was revised and training was conducted, QOs evaluating these equivalencies did not consistently follow the process outlined in the program plan. Some but not all QOs made the effort to research and verify the evidence of completion listed for the equivalencies. In other instances, the QO instead chose to assess knowledge through an oral interview without necessarily granting full credit for the listed activities/training on the equivalency form. However, there was no documentation that this was the method chosen to determine the competency was met; the equivalency form was signed by the QO implying the equivalency was granted on the basis of the listed activities/training.

Although there is clear guidance in NSO's current TQP Program Plan for the use of equivalencies, there is not a consistent and clear understanding on the part of the TQP participants and QOs on the application and evaluation of equivalencies. Recent applications of the use of the Competency Equivalency Evaluation Form were reviewed and found to be discrepant with the intended use as documented in the NSO TQPP. Additionally, the qualification card for the Agent listed equivalencies for several competencies. However, the use of equivalencies for an STSM requires the Agent's approval. In this case, since the Agent is the candidate under evaluation, it would be logical for the next higher STSM to approve the use of equivalencies for the Agent. No such approval or documentation was completed.

#### Area for Improvement

AFI-5-X: There is not a consistent and clear understanding on the part of the TQP participants and QOs on the application and definition of equivalencies.

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

DOE O 426.1 states that competency requirements identified as having Department-wide applicability must be transferable. A review of the qualification cards and interviews with the NSO TQP Program Manager and the NSO Senior Training Support Services Contractor indicates that each TQP participant receives a package, which includes the General Technical Base, Functional Area Qualification, and the NSO Site Specific Qualification standards. Some TQP participants are required to complete a Facility Specific Qualification Standard. A sampling of the qualification standards competencies indicate that the competencies level of knowledge (familiarity, working and expert) are applied appropriately as identified and documented on the qualification cards.

The NNSA Manual NA-1 M 426.1-1A describes the process to transfer TQP qualification from other offices. The goal is to accept qualifications from other offices because it supports the principles of transportability and avoid significant training cost and enable employees to contribute sooner to the accomplishments of DOE's mission. Acceptance of the transferred qualifications is at the discretion of the QO.

A review of TQP participant training and qualification records indicated that while some of the packages were very well documented with each competency clearly addressed as to the manner of evaluation and the level of documentation supporting that, others were not. There are numerous qualification cards for NSO TQP participants that used equivalency as the basis for meeting a competency; however based on a review of the records it is unclear if equivalency was in fact the method used for competency completion or if the term was misapplied. The corrective actions taken in response to this issue from NSO's TQP Accreditation Self-Assessment included adding a new form, the Competency Equivalency Evaluation Form, and training QOs on the process to be followed when evaluating equivalencies. However, no corrective actions were taken to reevaluate prior equivalencies granted for TQP participants. The lack of verified objective evidence for prior equivalencies is an issue with the potential to affect transportability of NSO's TQP.

Position descriptions and performance plans were reviewed for several TQP participants. Some discrepancies in position descriptions were identified, such as not including a requirement to achieve or maintain qualification in the TQP. A vacancy announcement for an STSM position was reviewed. It correctly identified the position as one in the TQP in the STSM functional area but there is no evidence to demonstrate the FTCP Agent concurred with the vacancy announcement or with the candidate selection as required by DOE O 426.1 (see AFI-3-3).

Performance plans for 15 different TQP participants were sampled and several discrepancies were identified. Examples of these discrepancies include: the performance plan for the Agent did not include performance measures related to his role as the Agent; the performance plans for two employees in the Safeguards and Security FAQ allow 24 months for completion of their

TQP without an approved extension beyond the maximum allowable completion time of 18 months as prescribed in the NSO TQPP. Two other performance plans for individuals in the TQP did not have specific measures related to TQP.

#### Area for Improvement

AFI-6-1: The lack of objective evidence supporting competency evaluations for some legacy records impacts transportability.

#### Noteworthy Information

N-6-1: Some Position descriptions and Performance Plans do not incorporate the Technical Qualification Program.

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

Overall, NSO TQP participants have the required competencies to perform their assigned functions. This was verified by the Team through examination of records and interviews with senior managers, supervisors and technical staff including, FRs, SSOs, STSMs, and SMEs. The Team also reviewed records of completed training, qualification expectations identified in standards, records of individual accomplishments, final evaluation interview documentation, and the TQP program requirements.

Interviews with several qualified FRs demonstrated a solid understanding of their FR role, including the duties and responsibilities associated with overseeing Contractor activities. TQP records for other disciplines were sampled, and several other technical staff and managers in the areas of Operations, Fire Protection, and Senior Technical Safety Manager were interviewed to determine their technical competency. All individuals interviewed were able to adequately and appropriately answer questions within their area of qualification, and no issues were identified with the level of knowledge of the persons interviewed.

In addition, the Team conducted a walk-down of the U1a facility (Underground facility used for sub-critical experiments) with a Facility Representative (FR) and NSO TQP Manager to observe the FR's interaction with facility personnel and facility systems. The FR had developed a personal checklist based on DOE and Contractor requirement documents to assist him in evaluating conditions identified during operational awareness activities. The FR was designated as qualified in all applicable TQP areas, including completion of the Underground Operations, and Facility Representative Office / Facility Specific Gap Qualification Card (improper use of Gap Qualification Card is discussed below). The FR demonstrated excellent technical knowledge of the facility and its operations, and had established good working relationship with the Contractor.

Review of qualification cards for several FRs, SSOs, STSMs and SMEs and interviews with QOs indicated that the process for verification of individual competencies in General Technical Base (GTB), FAQss, and site/facility specific areas, when they are established, generally follow the requirements of DOE O 426.1A and its flow down to the NSO procedure. Mechanisms for verification of competencies used at NSO include written exams, oral evaluations, observation of task activities performed by the candidate, as well as use of equivalency process. A careful examination of the implementation of the process for verification of competencies for SSOs and FRs led to identification of two areas needing improvement described below.

- The evaluated walkthrough records associated with SSO qualification on the Device Assembly Facility (Emergency Lights, UPS, and Standby Diesel and Fire Suppression System, Fire Detection, and Alarm System) were reviewed. Based on a review of the evaluated walkthrough documentation it is not evident that the evaluation was conducted in the manner intended, or that the process used allowed the SSO candidate to demonstrate sufficient level of retained knowledge of the system status to justify qualification.
- Examination of FR requalification activities and records revealed that the process as implemented does not fully satisfy the requalification requirements of DOE O 426.1:
  - FR training records do not contain appropriate evidence that requalification of FRs had been conducted in accordance with DOE-STD-1063-2006.
  - NSO allows FRs to requalify to a Gap Qualification Card even after their original qualification has lapsed for many years. DOE-STD-1063-2006 requires full qualification after three years. Review of an FR training record revealed that the FR who initially qualified at a facility in 1998, did not complete requalification at subsequent three year intervals, and then was assigned to complete a “Gap” qualification card in 2009, and was designated as qualified.
  - NSO O 426.1 assigns full responsibility for requalification, when required by a Qualification Standard, to individual employees. This may be an appropriate strategy for those areas that are not identified as key qualification areas in DOE O 426.1. However, many elements of FR requalification, including ensuring timely requalification, dealing with administering compensatory measures due to failure to pass exams or delays in meeting qualification requirements, must be part of an institutional process for which FEM or his formal designees are directly responsible.

Through the combination of methods it is evident that NSO actively seeks and embraces participants’ feedback to improve the TQP. At NSO, similar to other sites across the Department, 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 Manager for incorporation into the program and are generally satisfied with the resulting disposition. In addition to feedback received in response to events and activities, periodic evaluations, including self-assessments, external reviews, and requested assist

visits, provide feedback and improvement information. A number of such activities had been conducted at NSO during the last several years, including:

- FR Program Self-assessments in 2007 and 2009.
- A number of engineering assessments of safety systems of the Device Assembly Facility (DAF) in December 2009, and January 2010.

In general, issues identified during these assessments have been appropriately analyzed, and prioritized. Selected corrective actions reviewed by the Team were found to be well formulated, actionable, and were tracked in a capable issues management system by the NSO Performance Assurance System organization. Open issues are routinely reported to management, including the number of days the closing of an issue is overdue.

In addition, NSO performed two self-assessments in preparation for this TQP Accreditation Review in 2007 and 2009. The Team's review of the findings and OFIs of the 2009 assessment and corrective actions revealed a number of weaknesses. There is no evidence that the development of the corrective actions was based on rigorous analysis and full understanding of the basic causes of the weaknesses identified in the assessment report. In addition, the Team also discovered weaknesses in implementation and effectiveness of completed corrective actions. Several of the Accreditation Team findings may not have been found as inadequacies if the NSO 2009 Self Assessment findings had been effectively addressed. Tracking of TQP corrective actions and documentation of objective evidence is accomplished utilizing a local spreadsheet developed by the Training Manager. This tool is not robust enough for future expansion when necessary and does not provide the capability for documentation of detail analysis, effective tracking of issues and management reporting.

The requirements for TQP continuing training process are described in NSO TQP Plan. It is the expectation of the TQP Plan for TQP participants to participate in continuing education and training, particularly in areas necessary for maintaining current knowledge of the laws and directives referenced in their qualification packages. NSO has accomplished this objective through the implementation of the NNSA Service Center Continuing Training process. An interview with the Training Manager, and review of selected Continuing Training packages demonstrated that the NNSA Service Center process and tools as described in the Continuing Training User's Guide have generally been implemented. The process however could be further improved through inclusion of site/facility specific training requirements, as is currently planned by the Training Manager. A positive step, implemented by the Training Manager beyond the requirements of the NNSA Service Center process is tracking of the continuing training status for CY 08, 09, and 10, as an input into the Training Needs Analysis, and funding decisions that ensure TQP related training is given appropriate level of priority. Even though the overall continuing training program is positive, FR continuing training is an area of improvement as described below.

The triennial self-assessment of the NSO FR program completed in 2007 included a finding that the NSO FR continuing training procedure had not been implemented. The triennial self-

assessment of the NSO FR program completed in 2009 included a Noteworthy Practice that the FR continuing training program exceeded expectations. That determination was made based on the fact that the acting FR Group Leader assigned topics to FRs and monitored completion, and because topical assignments and instructional guidance were relevant and provided FRs with practical information. However, that process was not formalized and was lost when the acting FR Group Leader was replaced. A review of *NSO TQP Continuing Training Status* for calendar years 2008, 2009, and 2010, for the six employees currently serving in FR positions indicated that continuing training has been inconsistently applied, and has been provided on an individual basis rather than on a FR programmatic basis.

#### Area for Improvement

AFI-7-1: Facility Representative requalification is not in accordance with the requirements of DOE O 426.1A as described in DOE-STD-1063-2006.

AFI-7-2: FR continuing training is no longer being implemented to meet the continuing training requirements described in DOE-STD-1063-2006.

AFI-7-3: The issues from the TQP Accreditation Self Assessment in 2009 were not fully analyzed, and a number of corrective actions not effectively implemented.

#### Noteworthy Information

N-7-1: The rigor and documentation of the SSO evaluated walk-down process for final qualification was not structured for appropriate demonstration of candidate's retained knowledge.

## APPENDIX A – OBJECTIVE AND CRITERIA EVALUATION FORMS

This Appendix contains the detailed reports for each specific criteria for the seven objectives required for TQP Accreditation. The reports reflect the results of each of the individual team members assigned to evaluate the objective(s) and are 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 and reflects the consolidated view of the entire team.

### OBJECTIVE 1

**Team Member(s):** Denise Webb

**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

- DOE O 426.1, *Federal Technical Capability*, 11-19-09
- NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facilities*, 05-19-08
- NSO O 426.1, *Technical Qualification Program Plan*, 02-16-10
- NNSA NSO *Summary Level Job Analysis for NSO TQP Positions*, February 2010
- NNSA NSO *Technical Qualification Program Monthly Status Report – Period Ending May 2010*
- NNSA NSO *Final Report of the Technical Qualification Program Accreditation Self-Assessment*, October 2009
- NNSA NSO *TQP Issues and Actions – Schedule and Status Tracking*, 6/7/10
- NNSA NSO *Functions, Responsibilities, and Authorities*, 05-11-09

- NNSA NSO *Annual Workforce Analysis and Staffing Plan Report*, 1/14/10
- NNSA NSO Memorandum for Record, *Response to OFI-TQP-1.1 from the Final Report of the October 2009 Technical Qualification Program (TQP) Accreditation Self-Assessment*, undated
- Performance Plans, Position Descriptions, IDPs, Written Examination Results, Oral Board Packages, and Training Records for the following positions/subject matter experts: FTCP Agent, Radiation Protection, Fire Protection Engineer, SQA/QA, Nuclear Safety Specialists (2), Environmental Compliance, Safeguards and Security (2), Waste Management, Technical Program Manager, STSM, Facility Maintenance Management, Electrical Systems, Facility Representative

### **Interviews**

- NNSA NSO FTCP Agent
- NNSA NSO Training Manager/TQP Manager
- NNSA SC OHCMS Recruitment Specialist for NSO
- NNSA NSO Human Capital Liaison
- Fire Protection Engineer/Qualifying Official
- Radiation Protection Specialist/Qualifying Official
- SQA/QA SME/Qualifying Official
- Deputy Assistant Manager for Safety/Qualifying Official
- Deputy Assistant Manager for Environmental Management/Qualifying Official

### **Discussion**

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.

DOE O 426.1 requires the Field Element Manager (FEM) to designate the positions and/or individuals in their respective organizations required to participate in the TQP. The NSO TQPP states the Supervisor/FTCP Agent/Human Capital will determine if a position requires TQP participation. Similarly, DOE O 426.1 states the FEM is responsible for assigning qualifying officials (QOs) to sign TQP or site-specific qualification cards. The NSO TQPP states that QOs are nominated and approved by the supervisor and FTC Agent.

The new NSO TQP Plan dated February 2010 defines a process for determining TQP applicability for new or vacant positions and for changes to existing positions or incumbents. A Memorandum signed by the Agent in response to OFI-TQP-1.1 from the NSO TQP Accreditation Self-Assessment conducted last year addresses the lack of an evaluation for all technical positions regarding TQP applicability and states that the new process will be applied only to new or changed positions and not to all legacy personnel. The Memorandum includes an

attachment with a listing of all NSO employees and those identified as TQP participants. This listing was compared with the participants listed in the latest TQP Monthly Status Report and no discrepancies were found with two exceptions. One employee identified as a TQP participant is not included in the monthly TQP status report. The NSO Criticality Experiments Facility (CEF) Federal Project Director (FPD) was identified as not being a TQP participant in the Memorandum. However, DOE O 426.1 states individuals with project management responsibilities for defense nuclear facilities must be qualified through the PMCDP, the GTB, and appropriate site/facility qualification standards. Since CEF is a defense nuclear facility, the CEF FPD should have been tracked in NSO's TQP as a participant requiring completion of the GTB and site-specific qualification standards. A review of his records indicates he is not current on the GTB although he is in the process of completing both this qualification standard as well as the STSM qualification standard due to a recent appointment to a new position which requires he be STSM qualified. All other FPDs with responsibility for defense nuclear facilities are already TQP participants although their TQP status only indicates their Functional Area Qualification Standard completion; there is no indication of their PMCDP certification or GTB qualification status.

All records for employees who are recent hires or for those reassigned to a new Functional Area Qualification Standard were reviewed and found compliant with NSO's process for evaluating TQP applicability. This process as outlined in Flowchart 1 of the NSO TQPP is followed to ensure new positions are correctly evaluated for TQP applicability. The process used to evaluate changes to existing positions for TQP applicability is documented in Flowchart 2 of the NSO TQPP. The process requires the supervisor to complete a Position Evaluation Questionnaire (PEQ) and after concurrence by the FTCP Agent, the position is either designated as a TQP position or not. There is a discrepancy with the process description associated with Flowchart 1 and the PEQ form referenced by the process. The process states the PEQ is filled out indicating TQP applicability and after concurrence by the FTCP Agent and hiring or position change actions are completed, the TQP Coordinator includes the position in the TQP *followed* by a determination of the applicable functional area and/or site-specific qualification standard. However, the PEQ form requires the supervisor to indicate the functional area assigned. This minor discrepancy should be clarified to ensure the process for identifying TQP participants is clearly described.

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

IDPs were reviewed to ensure training and/or job assignments have been identified to reflect activities needed to support initial TQP qualification or to ensure continued proficiency associated with maintenance of TQP qualification. Most IDPs reviewed did appropriately identify activities associated with the individual's TQP. Training records were also reviewed to ensure training activities reflect a commitment towards TQP initial qualification or continued proficiency.

Criteria 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.

The NSO TQP Plan outlines a tiered approach towards achieving technical qualification commensurate with the responsibilities of the position. All TQP participants must complete the GTB, an FAQs, and applicable Site/Facility/Position-Specific qualification standards. Once the qualification cards are complete, all candidates must successfully pass a comprehensive written exam (defined as greater than 80%). STSMs will also either successfully pass an evaluated walkthrough or an oral board examination by a qualified STSM or qualification board with at least one STSM. There is comprehensive guidance in the NSO TQP Plan on how to develop, conduct and evaluate facility evaluated walkthroughs and oral board examinations. Facility representatives must successfully pass both an evaluated walkthrough and oral board examination. Safety System Oversight staff must successfully complete a facility evaluated walkthrough.

Several qualification cards were reviewed to ensure a consistent rigorous approach is followed for qualification as documented in the NSO TQPP. It is apparent the updated NSO TQP Program was not retroactively applied to TQP candidates who previously qualified. There were several instances of the use of equivalency on qualification cards without the use of the Competency Equivalency Evaluation Form required in Attachment 6 of the NSO TQPP. The rigor and thoroughness of the evaluation process used for qualification of individuals prior to the issuance of the current version of the NSO TQPP is difficult to assess based on the evidence of the qualification records. Since NSO has not conducted a gap analysis or reevaluated prior qualifications against their current TQP program plan, the documented evidence does not suggest all currently qualified TQP candidates were evaluated in a manner that would support transportability. This issue is described in more detail under Objective 6.

A recent vacancy announcement for an STSM position correctly identified the position as one in the TQP in the STSM functional area but there is no evidence to demonstrate the FTCP Agent concurred with the vacancy announcement or with the candidate selection as required by DOE O 426.1. The Agent has currently not completed his STSM qualification, and is operating under a compensatory measure from the FEM restricting him from signing STSM qualification cards. However, the Agent signed a recent STSM qualification card even though an FEM stated that the NNSA NSO Deputy Manager would approve all STSM qualification cards until the Agent completed his STSM qualification. The Agent is also not fulfilling all Agent responsibilities dictated by DOE O 426.1, and there are no formally documented duty limitations established for his responsibilities in accordance with DOE O 426.1 and NSO O 426.1 other than the single compensatory measure discussed. In addition, the Agent does not meet the technical education requirements for an STSM position and there is no evidence that NSO has requested approval for an equivalency to DOE O 426.1 regarding this discrepancy. This issue is addressed under Objective 3.

A strength associated with NSO's qualification process is the requirement to document work experience, developmental activities, and training and/or self-study activities directly under each competency on the qualification cards as documented evidence for the QO. All evidence used for qualification activities should be on file in the participant's records but documenting the basis for completion of a competency within the qualification card itself provides one place for the Supervisor, FEM, FTCP Agent and/or an independent assessor to determine how the competency was deemed satisfied. However, based on the team's review, the quality of some of the competency basis documentation is lacking. The "basis" information on some qualification cards was identical for nearly every competency even if it did not apply to the subject matter for that competency. Therefore, the concept is noteworthy, but the implementation of this process could benefit from improved rigor and clarity.

Discussions with qualifying officials indicate a consistent understanding of the need to apply rigor during qualification check-outs using the documented process in the NSO TQPP, as specifically evidenced by statements from one QO who was unwilling to approve the use of equivalencies for a candidate on the basis of the evidence provided. However, there was an inconsistent understanding of the approach to be taken as a QO. One QO took the time to review the knowledge and skills associated with the competency and develop an answer key for each of these knowledge and skill statements prior to conducting the oral interview. However, he did not document the results of the oral evaluation as required by the NSO TQPP Competency Evaluation Form/Competency Equivalency Evaluation Form. Other QOs interviewed did not indicate they prepared written questions and answers ahead of time but did base their oral evaluation on the competency knowledge and skill statements, and one of these QOs did make notes on the Competency Equivalency Evaluation Form regarding the topics discussed. Another QO failed to complete the required Competency Equivalency Evaluation Form and stated they had never read the new NSO TQPP. Several QOs interviewed indicated they conducted both training activities and competency checks during the same session conducted for a competency sign-off.

The NSO TQPP requires all QOs to complete orientation training and be briefed by the Agent on the expectations of the program. As part of the Corrective Action Plan from NSO's TQP Self-Assessment conducted in 2009, training on the QO responsibilities with respect to evaluating equivalencies and documenting attainment of competencies was provided via classroom training. However, based on the QO interviews conducted, there is a clear inconsistency of understanding related to the documentation requirements for competency evaluations along with a misunderstanding of the definition and application of equivalencies. The equivalency issue is addressed and documented under Objective 5.

Written examinations results were reviewed and found to be compliant with the program requirements as well as oral board records.

### **Area for Improvement**

**AFI-1-1:** Qualifying officials are not consistently implementing the qualification process and expectations outlined in NSO O 426.1.

**Strength**

**S-1-1** When done appropriately, the documentation of work experience, developmental activities, and training and/or self-study activities directly under each competency on the qualification cards provides a clear basis of competence for the QO, Supervisor, FTCP Agent, and/or an assessor evaluating a candidate's technical qualification.

**Noteworthy Information**

**N-1-1:** Tracking of the PMCDP, GTB, and appropriate Site/Facility qualifications of Federal Project Directors responsible for defense nuclear facilities should be added to NSO's TQP Monthly Status Report.

**N-1-2:** The process used for determining TQP applicability as documented in NSO O 426.1 is inconsistent with the Position Evaluation Questionnaire (PEQ). The process requires the determination of the functional area to be made after the PEQ form is completed and concurrence by the FTCP Agent that the position is applicable to the TQP. However, the PEQ form requires the supervisor to indicate the functional area assigned. This minor discrepancy should be clarified to ensure the process for identifying TQP participants is consistently applied

## **OBJECTIVE 2**

**Team Member(s):** Mark Alsdorf & John Krepps

**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**

- NSO O 426.1, Technical Qualification Program Plan, 02-16-10
- DOE O 426.1, Federal Technical Capability
- NSO Senior Facility Representative Qualification Standard, January 2008
- DOE-STD-1138-2007, Industrial Hygiene Functional Area Qualification Standard
- NSO Technical Qualification Program Monthly Status Report – Period Ending June 2010
- NSO Site-Specific Qualification Standard, October 2009
- Summary-Level Job Analysis for NSO TQP Positions, January 2010
- Compensatory Measures Associated with Eric T Allred During the Occupational Safety Qualification Process Memo, Jun 14, 2010
- Device Assembly Facility (DAF) Safety System Oversight Representative (SSOR) Designations, Jun 16, 2010
- NNSA NSO (FTCP) Annual Workforce Analysis and Staffing Plan, January 14, 2010
- Safety Systems Oversight Representatives Designations, May 3, 2010
- NSO Facility Representative Assignment Tables, January 25, 2010
- Device Assembly Facility - Facility Representative Qualification Standard, September 2009

- Balance of Site/High Energy Physics Facility Representative Qualification Standard, November 2009
- NNSA/NNSA/NSO Senior Facility Representative Qualification Standard, Rev. 2, January 2008
- Underground Operations Facility Representative Qualification Standard, January 2010
- Supervisory General Engineer Physical Scientist Federal Project Director Position, May 2009
- Safety System Oversight Representative Qualification Standard – Device Assembly Facility Building Ventilation System, July 2007
- Safety System Oversight Representative Qualification Standard – DAF Glovebox Negative pressure Differential Lo-Flow Pressure Regulators Pressure Detectors with Alarms, February 2010
- Safety System Oversight Representative Qualification Standard – Device Assembly Facility Standby Diesel Generator, July 2007
- TQP Accreditation Self-Assessment Final Report, ACT-AMSS-10.21.2009-207054, October 2009
- Corrective Action Plan for Final Report of the October 2009 Technical Qualification Program Accreditation Self-Assessment, November 2009
- NNSA/NSO Technical Qualification Program Monthly Status Report – Period Ending June 2010
- National Nuclear Security Administration Nevada Site Office (NNSA/NSO) Management System Steering Panel (MSSP)
- Technical Qualification Program Self Assessment, January – February 2008
- NNSA/NSO Qualifying Officials List, 3/17/2010
- TQP Qualification Records

### **Interviews**

- NSO TQP Manager/NSO Training Manager
- NSO TQP Support Service Contractor
- SSOR Group Leader/Mechanical Systems
- FR/SSOR/Criticality Safety
- SSOR/Fire Protection
- SSOR/Radiation Protection
- Nuclear Safety Specialist

### **Activity Observations**

- Contractor Plan of the Day Meeting
- Weekly Facility Representative Conference Meeting

### **Discussion**

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

A review of the NSO TQPP and an interview with the TQP Manager confirms that an approved qualification standard exists for each functional area covered by the NSO TQP. The NNSA NSO Federal Technical Capability Panel (FTCP) Annual Workforce Analysis and Staffing Plan, January 14, 2010, describes the NSO current mission and technical staffing needs, delineated along functional area lines. All NSO TQP positions have been assigned an appropriate DOE functional area qualification standard. Interviews with the NSO TQP Program Manager and NSO Training Support Services Contractor confirm that recognized experts are involved in determining FAQS applicability.

A review of selected qualification standards indicates that complex-wide, site-, and facility-specific competencies are covered. The General Technical Base Qualification Standard (GTBQS) and Functional Area Qualification Standards (FAQS) form the basis for the NSO Technical Qualification Program (TQP). Each site- and facility-specific competency contains adequate and appropriate knowledge, skills and ability statements.

Criteria 2.2 Recognized experts help establish competency requirements.

Interviews with the TQP Program Manager and Training Support Services Contractor indicate that site office subject matter experts (SMEs) participate in FAQS reviews requested by the FTCP. According to the TQP Program Manager, some of these SMEs are also involved in the development of the NSO site- and facility-specific qualification standards. With the TQP Program Manager serving as the facilitator, site personnel provide review and quality checks of NSO site- and facility-specific qualification standards.

In response to the TQP Accreditation Self-Assessment, October, 2009, finding F-TQP-2.1, “position specific qualifications do not exist for all positions (Site preference) and many site/facility specific qualification standards need revisions to match current site/facility configuration”, NSO produced a *Summary-Level Job Analysis for NSO TQP Positions* in February 2010. This summary-level job analysis was also conducted to address finding F-TQP-4.1, “no analyses could be located for the site/facility/position specific qualification standards”.

The analytical approach consisted of document review/analysis, table-top analysis, and discussions with subject-matter experts using systematic approach to training guidance. The conclusion of the summary was that the findings were in error. Specifically, the summary states that “Previous analyses were conducted, as evidenced by the large number of site and/or facility specific qualification standards, however when the previous Nevada Operations Office training functions and associated files were moved to the Service Center, the analyses were apparently lost. This summary-level analysis acknowledges this issue and documents the NSO decision to not re-analyze positions that already have adequate site and/or facility specific qualification

standards assigned. Additionally, this analysis documents no further job/task analyses are required at this time.”

The rigor of the *Summary-Level Job Analysis for NSO TQP Positions* could be better demonstrated by inclusion of the title and name of the subject matter experts that provided input for the analyses and documented evidence of the analyses indicating, by competency, the agreement by team members. This analysis report acknowledges the absence of position analyses documentation to determine site- and facility-specific competencies. This report also documents the NSO decision to not “re-analyze” the positions based on the analysis team’s assertion that NSO positions “already have adequate site- and/or facility-specific qualification standards.” No analyses were provided to substantiate this decision other than the resultant report. Therefore, it cannot be confirmed that any analysis conducted supporting the *Summary Level Job Analysis for NSO TQP Positions* was sufficient or that the report’s conclusions are valid.

The following topics were not covered by the NSO site- or facility-specific qualification standard:

- Contractor institutional procedures (e.g. Stop Work Order, Lockout/Tagout, Quality Assurance, Integrated Safety Management, Environmental Impact Statement, etc.)
- NSO Facility Representative Program
- ES&H requirements of the operating contract
- Use of elevated competencies (working or expert level) for selected positions (e.g. Nuclear Safety Specialist, Quality Assurance, Emergency Management). A specific example is that NSO does not currently have a qualification standard that includes an expert level of knowledge competency for documented safety analysis or technical safety requirements.

Additionally, site- and facility-specific qualification standards only employ a limited use of “practical factors” (specific examples for consideration include: approve ORPS corrective actions, attend critiques, observe facility rounds and shift turnover, develop/deliver training) to ensure mastery of skills and abilities identified for a competency.

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

Certifications and licenses, such as Certified Health Physicist and Professional Engineer, are encouraged and considered in competency completion. The NSO TQPP provides for consideration of employee competencies based on professional certifications/licenses. Interviews with various managers confirmed these facts. In addition, a representative sampling of training records was conducted; there was evidence of certifications and licenses in several files and on several qualification cards, indicating the incorporation of professional certifications and licenses in the training program.

Criteria 2.4 Competency requirements are identified as follows: 1) Basic Technical Knowledge, 2) Technical Discipline Competency, and 3) Position Knowledge, Skills, and Abilities.

Based upon interviews with the NSO management team and selected TQP participants, basic technical knowledge is demonstrated through completion of the DOE-wide GTBQS, as supported by a review of selected training records. In all records reviewed, each participant completed a comprehensive examination to demonstrate GTBQS qualification through the National Training Center's computer-based training.

Based upon interviews with the management team and selected TQP participants, technical discipline competency is demonstrated through completion of the applicable FAQs, as supported by sampled training records. The site office has required all TQP participants, except Safety System Oversight personnel, to complete a comprehensive written examination in their respective FAQs. Safety System Oversight personnel complete a final walk-through evaluation of each assigned safety system. Office/facility/position specific qualification standards have been completed for FRs and Safety System Oversight personnel.

NSO implemented a *Site Specific Qualification Standard Technical Qualification Program* in October 2009. To ensure familiarity-level knowledge of key topics, the NSO Management System Steering Panel identified 13 competencies covering 11 local directives, various charters, and emergency plan. The NNSA/NSO Management System Steering Panel is chaired by the Deputy Manager and members include the Senior Nuclear Safety Advisor and designated Assistant Managers and Deputy Assistant Managers.

All TQP participants, and employees outside the TQP, were required to complete this office-specific qualification standard by January 31, 2010. The requalification frequency for this qualification standard was established as every three years. Requiring employees outside of the TQP to complete this standard demonstrates an increased level of management commitment to training and qualification.

### **Strengths**

**S-2-1:** NSO has implemented a site-specific qualification standard that must also be completed by employees outside the TQP.

### **Areas for Improvement**

None

### **Noteworthy Information**

**N-2-1:** Content areas are missing in some of the site- and/or facility-specific qualification standards.

### **OBJECTIVE 3**

**Team Member(s):** Ed Parsons, Ray Corey & Edna White

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

**Criteria:**

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

**Document Review**

- NSO O 426.1 Technical Qualification Program Plan, Nevada Site Office, 02-16-10
- NSO O 111.XH, Functions, Responsibilities, and Authorities, 05-11-09
- NNSA/NSO File Codes Manual, 09-4-2008
- TQP Qualifying Official Briefing, October 2009
- NSO Site Specific Qualification Standard, October 2009
- NSO Position Specific Qualification Standard, May, 2009
- RLA-712 Enclosure Radiograph Safety System, Safety Systems Oversight Qualification Standard , July, 2007
- Summary Level Job Analysis for NSO TQP Positions, February 2010
- NSO M 426X.1A, Safety System Oversight Program Manual, 06-23-08
- FRG-01, Facility Representative Procedure, 10-1-09
- NA-1 M 426.1-1A, Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities At Defense Nuclear Facilities, 05-19-08
- NSO Final Report of the Technical Qualification Program Accreditation Self-Assessment, October 2009
- NSO M 414.X-1A, Quality Management System, 11-21-07

- Letter to Karen Boardman, Chair, Federal Technical Capability Panel, Designation of New Federal technical Capability Panel (FTCP) Agent for the NNSA Nevada Site Office (NNSA/NSO), 03-31-09

### **Interviews**

- Assistant Manager for Safety and Security/FTC Agent
- Deputy Assistant Manager for Security
- NSO Deputy Manager
- Assistant Manager for National Security
- Deputy Assistant Manager for National Security
- Assistant Manager for Business and Contract Management
- Deputy Assistant Manager Business and Contract Management
- Deputy Assistant Manager for Environmental Management
- Nuclear Engineer, as Qualifying Official for Radiation Protection
- NSO TQP Manager/Training Manager
- NSO TQP Support Service Contractor

### **Activity Observations**

None

### **Discussion**

Criteria 3.1 Senior management is committed to the TQP.

The NSO senior management demonstrates a strong commitment to the Technical Qualification Program (TQP) through active participation in TQP activities. Senior management is highly engaged in qualification activities, including serving as qualifying officials, chairing oral evaluation boards and leading facility evaluated walkthroughs. Selection of TQP candidates and qualifying officials is discussed by senior management. On a quarterly basis, the progress of TQP implementation is presented to senior management and programmatic issues are discussed. Additionally, the current NSO manager has an in-depth understanding of NNSA's commitment to the federal technical capability program and its requirements due to his prior service as a Federal Technical Capability Agent.

Interviews confirmed that NSO senior management is committed to the NSO TQP and hold themselves accountable for the implementation of the NSO TQP. Additionally, NSO senior management has demonstrated that they are directly responsible for ensuring that the implementation of the NSO TQP produces competent technical workforce.

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

In general, the NSO Technical Qualification Program Plan (NSO TQPP) adequately translates the expectations of DOE O 426.1, Federal Technical Capability, into a functional document. As described in the NSO TQPP purpose statement, the NSO TQPP is considered a supplement to, and incorporates the requirements of NNSA's supplemental directive NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facilities*. The NSO TQPP is organized such that functional requirements of the program are specified in Appendix A, programmatic responsibilities are specified in Appendix B, and processes associated with TQP implementation are presented in a series of attachments to the document. The NSO TQPP serves as both a program description as well as the basic implementing document.

NSO M 414.X-1A, Quality Management System, Section 2.2.1, states; "NNSA/NSO implement the Technical Qualification Program (TQP) to ensure employees involved in such work possess the necessary skills and knowledge to effectively perform their job. Although the Service Center tracks the participants' TQP completion status, the first line supervisor is responsible for identifying candidates in the program and monitoring completion status for initial qualification and requalification. Employees in these positions, and first line supervisors with employee in these positions, must adhere to the requirements specified in the TQP addressed in DOE M 426.1-1A."

NSO TQPP requirements are also described within two documents, the Safety System Oversight Program Manual, NSO M 426.X-1A, and the Facility Representative Procedure, FRG-01, 10-1-08. Section 4 of the Safety System Oversight Program Manual describes the SSOR qualification process; however, there is no incorporation by reference or pointer within this document to the NSO TQPP. Similarly, Chapter 1 of the Facility Representative Procedure describes the training and qualification of the FRs, but does not recognize the NSO TQPP as the higher level implementing document for qualification of the Facility Representatives. Additionally, the NSO TQPP does not incorporate by reference either document.

The NSO TQPP was compared to the expectations of DOE O 426.1. While the majority of the "must" statements within DOE O 426.1 that pertain to field operation were addressed within the NSO TQPP, some expectations were not directly addressed. Examples include:

Section 4 Requirements b. (2) Principles; (a) through (g); Inclusion of the seven principles through processes and requirements is not directly evident within the NSO TQPP. (Note: consideration should be given to explicitly addressing the principles within the NSO TQPP.)

Section 4 Requirements b. (3) (i) "Addressing oral or written examination failures or other qualification failures, establishing reexamination requirements, *and making work area or position reassignments.*"

Section 4 Requirements, b. (5) (a) “A senior training official and/or an STSM must be designated as responsible for program direction and performance.”

Section 4 Requirements, b. (6) (b) “FEMs or designees must qualify STSM, FR and SSO candidates .....

Section 4 Requirements, b. (6) (c) “FEMs must require personnel filling STSM positions to re-qualify to the latest version of the STSM FAQs every five (5) years.” (Current statement is STSMs will undergo a review of competency requirements every five years.)

Section 4 Requirements, b. (6) (e) “Management must put in place compensatory measures if the incumbent in an identified STSM position has not completed qualification or does not meet the education or experience requirements contained in the STSMFAQS.”

The rationale for the lack of inclusion of some requirements from DOE O 426.1 is described in the NSO/TQP as follows:

- “This directive supplements DOE M 360.1-1B, DOE O 426.1, NA 1 M 426.1-1A, and the NNSA Technical Qualification Program (TQP) User’s Guide. It adds Federal Technical Capability (FTC) policies and procedures specific to the National Nuclear Security Administration (NNSA) Nevada Site Office (NNSA/NSO) and standardizes technical qualification processes across that organization.”

However, by dispersing TQP requirements through numerous documents without procedural links (NSO O 426.1, FRG-01, and the Safety System Oversight Program Manual) and incorporating by reference requirements through multiple levels (DOE O 426.1 to NNSA SO 426.1 to NSO O426.1), the potential for the NSO organization to not implement an expectation of the TQP is increased..

DOE O 426.1, Federal Technical Capability order, paragraph 4.b. (2), requires organizational TQPs to use seven principles as a basis for their program. One of these principles, Qualification Tailored to Work Activities, states that, “A process must be developed to determine needed additional office/site/facility specific technical competencies for the individual positions”.

However, the NSO TQPP contains no documented process for identifying facility or site-specific qualification competencies. Additionally, paragraph 4.b. (3) requires organizations to document its TQP requirements in a TQP plan. These plans must include processes and requirements for “identifying, developing, approving, revising, and updating individual qualification requirements, as appropriate”.

In addition to the NSO TQPP, NSO has in place an intranet TQP webpage that organizes the supporting DOE and NNSA documents, QO and equivalency forms, some training materials and other information for ease of access by the TQP participants. The webpage is available to all

TQP participants. The information presented on this webpage was found to be informative and accurate.

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

NSO's document, Functions, Responsibilities, and Authorities, NSO O 111.XH, dated 5-11-09, delineates broadly the key responsibilities of the NNSA/NSO manager and the FTC Agent. The defined responsibilities in this document for the NSO manager are:

- Provides adequate resources and support to meet expectations of the FTCP.
- Identifies Senior Technical Safety Managers (STSM).

The defined responsibilities in this document for the FTC Agent are:

- Assists the NNSA/NSO Manager in establishing a formal STSM Program for the organization.
- Approves the site's FTCP Annual Action Plan.
- Facilitates recruitment to fill open positions with technically competent individuals.
- Concurs with STSM vacancy announcements and crediting plans to ensure the inclusion of adequate selection criteria.
- Presents to the FTCP the office's justification regarding the identification and qualification of STSM incumbents.
- Maintains a list of STSMs.
- Coordinates the periodic self-assessment of the NNSA/NSO TQP.

Additionally, the NSO TQP Plan defines responsibilities in Appendix B for the Manager, FTCP Agent, immediate supervisors, second-level supervisors, QOs, participants, TQP coordinator and Training coordinator.

DOE O 426.1, Section 4 a. (1) requires the FTCP Agent be STSM qualified. NSO has designated the Assistant Manager for Safety and Security (AMSS) as the FTC Agent of record, however, the AMSS is currently not STSM qualified. While the AMSS is pursuing his STSM qualification, the NSO manager, through a memorandum to the FTCP Chair, has limited his duties as a compensatory measure by restricting his approval authority for qualifying STSMs. Contrary to the above, the FTCP Agent recently signed a qualification card for an STSM who completed his qualifications.

DOE-STD-1175-2006, Senior Technical Safety Manager Functional Area Qualification Standard, states that "An STSM shall possess a scientific or engineering degree with a major in an academic area that supports the functional responsibilities of the position." While the FTCP Agent does not meet this education requirement, the NSO FEM has committed to "...pursuing exception to the STSM Policy" in a letter to the FTCP Chair. However, the Team found no documentation that this had been done.

A review of the FTC Agent's qualification card indicated the use of several equivalencies. The NSO TQPP requires that all STSM equivalencies to be approved by the FTC Agent. There is no evidence to support the next higher STSM in NSO (i.e. the Deputy Manager) approved the use of equivalencies for the Agent's STSM qualification. The Competency Equivalency Evaluation Forms were signed only by the QO.

A recent vacancy announcement for an STSM position correctly identified the position as one in the TQP in the STSM functional area but there is no evidence to demonstrate the FTC Agent concurred with the vacancy announcement or with the candidate selection as required by DOE O 426.1.

As per DOE O 426.1, the FEM must perform certain tasks, such as designation of positions/ individuals participation, candidate qualification, and guidance development, unless the tasks are formally delegated to a designee. Many of these tasks are being performed by subordinates without formal delegations. As per NSO O 111.XH, Functions, Responsibilities, and Authorities order, Appendix A, 3.b(1), states that: "All delegations must be in writing, which must be provided to the designee. This document will establish a clear understanding between the delegating authority and the designee of the specific function delegated and all circumstances under which the authority may be exercised including any restrictions or prohibitions related to further delegation."

Criteria 3.4 The procedures that govern implementation of the TQP are understood by all involved and are being implemented as written.

Interviews were conducted with the NSO senior management, qualifying officials, TQP Coordinator, FTC Agent and TQP participant regarding their understanding of the TQP and its implementing direction. From the interviews, it was determined that the NSO staff generally understands the expectations of the program and implements the program as required. However it is not clear that the NSO staff clearly understand the roles and responsibilities of the NSO FTCP Agent in the TQP.

The execution of the qualifying official duties during the evaluation of some candidates was not being performed as expected. In two cases, contrary to training provided by the TQP coordinator, the QO provided mentoring of the subject matter during the evaluation of a candidate. Based on interviews with QOs, some understood the process and requirements for evaluation while others did not. This issue is a continuation of the NSO TQP self assessment OFI-TOP-7.1: Qualifying officials are not conducting evaluation activities consistently.

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

The NSO TQPP prescribes the requirements pertaining to the control and retention requirements for documents pertaining to the NSO TQPP. A review of the NSO TQPP participants training record summary sheets indicate that training is being requested by TQP participants and completed.

There are no indications that training needed to maintain qualifications has been denied. The NNSA Continuing Training User's Guide establishes the process for issuance and documentation of the Continuing Training Program (CTP). A CTP Progress Tracker lists the individual training requirements for each year, and is used to record progress toward completion of the annual CTP requirements. To document this requirement, the NSO TQP Support Services Contractor created a continuing training file for each participant that contains the CTP Progress Trackers signed by the TQP participant, the QO and FTCP Agent, and a CTP completion certification is issued.

The NSO TQPP also states that the documents generated by the NSO TQP will be controlled and retain according to the requirements established by DOE O 360.1B. The Enterprise Training Services (ETS) has the overall responsibility for maintaining individual training files. The NSO Senior Training Support Services Contractor provides copies of the completed Qualification Card to the Learning Center Career Development Department which forwards input to the ETS for the official training files. During the interview with the NSO TQP Manager, NSO has not validated whether the NSO TQP records were have been received by the ETS and filed in the individual TQP training file.

### **Area for Improvement**

**AFI-3-1:** NSO O 426.1, Technical Qualification Program Plan, contains no process for identifying facility or site-specific qualification competencies.

**AFI-3-2:** There is no objective evidence that the Site Office Manager was performing, or designees were specifically assigned, to implement the requirements of DOE O 426.1, Section 4 (5) (e) and (f); and DOE O 426.1, Section 4 (6) (b) as required by the NSO FRA order.

**AFI-3-3:** The roles and responsibilities, as defined in DOE O 426.1, for the FTC Agent are not always being carried out, nor have adequate compensatory measures been established while the FTC Agent is being qualified. In addition, the only compensatory measure that was established for the FTC Agent was not complied with.

### **Strength**

**S-3-1:** The level of engagement of the NSO senior management in the implementation of the TQP is noteworthy.

### **Noteworthy Information**

**N-3-1:** There are multiple documents that implement the TQP at NSO. A simplified approach to documenting the administration of TQP requirements, processes and expectations should be considered to reduce or eliminate confusion amongst the users.

**N-3-2:** The placement of common TQP information on a webpage that is accessible to the TQP participants and other individuals with duties within the NSO TQPP is noteworthy.

**N-3-3:** The duties of a qualifying official need to be re-emphasized during competency evaluations to assure a consistent approach and rigor in the evaluation process.

**N-3-4:** The roles and responsibilities issue regarding records management between field organizations and ETS still exist. This is considered an FTCP issue. (See Sandia Site Office and NNSA Service Center Accreditation Review reports for further information.)

## **OBJECTIVE 4**

**Team Member(s):** Mark Alsdorf & John Krepps

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

### **Criteria**

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

### **Document Review**

- NSO O 426.1, Technical Qualification Program Plan
- DOE O 426.1, Federal Technical Capability
- NSO Senior Facility Representative Qualification Standard, January 2008
- DOE-STD-1138-2007, Industrial Hygiene Functional Area Qualification Standard
- NSO Technical Qualification Program Monthly Status Report – Period Ending June 2010
- NSO Site-Specific Qualification Standard, October 2009
- Summary-Level Job Analysis for NSO TQP Positions, January 2010
- Compensatory Measures Associated with Eric T Allred During the Occupational Safety Qualification Process Memo, Jun 14, 2010
- Device Assembly Facility (DAF) Safety System Oversight Representative (SSOR) Designations, Jun 16, 2010
- NNSA NSO (FTCP) Annual Workforce Analysis and Staffing Plan, January 14, 2010
- Safety Systems Oversight Representatives Designations, May 3, 2010
- NSO Facility Representative Assignment Tables, January 25, 2010
- Device Assembly Facility - Facility Representative Qualification Standard, September 2009
- Balance of Site/High Energy Physics Facility Representative Qualification Standard, November 2009
- NNSA/NNSA/NSO Senior Facility Representative Qualification Standard, Rev. 2, January 2008
- Underground Operations Facility Representative Qualification Standard, January 2010
- Supervisory General Engineer Physical Scientist Federal Project Director Position, May 2009

- Safety System Oversight Representative Qualification Standard – Device Assembly Facility Building Ventilation System, July 2007
- Safety System Oversight Representative Qualification Standard – DAF Glovebox Negative pressure Differential Lo-Flow Pressure Regulators Pressure Detectors with Alarms, February 2010
- Safety System Oversight Representative Qualification Standard – Device Assembly Facility Standby Diesel Generator, July 2007
- TQP Accreditation Self-Assessment Final Report, ACT-AMSS-10.21.2009-207054, October 2009
- Corrective Action Plan for Final Report of the October 2009 Technical Qualification Program Accreditation Self-Assessment, November 2009
- TQP Qualification Records

### **Interviews**

- NSO TQP Manager/NSO Training Manager
- NSO TQP Support Service Contractor
- SSOR Group Leader/Mechanical Systems
- FR/SSOR/Criticality Safety
- SSOR/Fire Protection
- SSOR/Radiation Protection
- Nuclear Safety Specialist

### **Activity Observations**

- Contractor Plan of the Day Meeting
- Weekly Facility Representative Conference Meeting

### **Discussion**

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

The site office TQP utilizes FAQs prepared by recognized DOE SMEs and approved by the FTC Panel. These standards provide the basis for the NSO program.

NSO produced a Summary-Level Job Analysis for NSO TQP Positions in February 2010 in response to a finding in *The TQP Accreditation Self-Assessment Final Report, ACT-AMSS-10.21.2009-207054 October 2009*, to identify positional needs for site-specific competencies. This summary-level job analysis was conducted to address finding F-TQP-4.1, “no analyses could be located for the site/facility/position specific qualification standards”. The analytical approach consisted of document review/analysis, table-top analysis, and discussions with

subject-matter experts using systematic approach to training guidance. The result was a comprehensive list of NSO positional site- and/or facility-specific qualification cards and standards for each NSO TQP position. See objective 2 for additional discussion to further understand this issue.

Criteria 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.

Functional area qualification standards (FAQSs) developed by the Federal Technical Capability Panel are used by NSO as part of their TQPs. The FAQSs include Department-wide job-specific requirements related to the rules, regulations, codes, standards, and guides necessary to carry out the mission of the office.

A review of selected site- and facility-specific qualification standards and an interview with the NSO TQP Program Manager confirm that facility and site procedures were considered for inclusion when determining competency requirements. The Summary-Level Job Analysis for NSO TQP Positions validated previous positional analyses and the resulting site- and facility-specific qualification standard competencies. A more detailed discussion of this report is contained in objective 2 of this assessment.

A review of NSO site- or facility-specific qualification standards indicated that the following topics were not covered:

- Contractor institutional procedures (e.g. Stop Work Order, Lockout/Tagout, Quality Assurance, Integrated Safety Management, Environmental Impact Statement, etc.)
- NSO Facility Representative Program
- ES&H requirements of the operating contract(s)
- Use of elevated position-specific competencies (working or expert level) for selected positions (e.g. Nuclear Safety Specialist, Quality Assurance, Emergency Management). A specific example is that NSO does not currently have a qualification standard that includes working or expert level of knowledge competencies for documented safety analysis or technical safety requirements as implemented at NST.

Additionally, site- and facility-specific qualification standards only employ a limited use of “practical factors” (specific examples for consideration include: approve ORPS corrective actions, attend critiques, observe facility rounds and shift turnover, develop/deliver training) to ensure mastery of skills and abilities identified for a competency.

Criteria 4.3 The program supports the mission needs of the office.

The site office TQP provides marginal support for the mission needs of the NSO.

Accomplishment of the GTBQS and an appropriate FAQS provide a foundation for mission support. The addition of site- and facility-specific qualification standards, based on position duties and responsibilities, completes the knowledge, skills, and ability needs of the site office.

The NSO Technical Qualification Program Plan, NSO O 426.1, establishes an 18-month completion requirement for individuals assigned the GTBQS, appropriate FAQS, and site- and/or facility-specific qualification standard. This is expressed to participants via the Qualification Card, Individual Performance Plans, and an initial orientation to the program.

The NSO TQPP, section 10, establishes requirements /expectations for duty limitations. Specifically, “During the qualification process, the supervisor, Agent, or NNSA/NSO Manager will determine and document any limitations on the TQP participant’s duties. In most cases, TQP participants in the qualification process will continue with assigned duties while they complete their qualification.” In accordance with DOE O 426.1, section 4.b(6)(e), Compensatory and Alternative Measures: “Management must put in place compensatory measures if the incumbent in an identified STSM position has not completed qualification or does not meet the education or experience requirements contained in the STSM FAQS. In developing and implementing compensatory measures, management must ensure that positions of authority are compensated by fully qualified STSMs.” A review of qualification records for NSO STSM positions identified 4 of 5 STSMs in initial qualification did not have documented evidence of compensatory measures and duty limitations. These included the Assistant Manager for Environmental Management, the Deputy Assistant Manager for Security, the Acting Deputy Assistant Manager for Safety, and the Deputy Assistant Manager for National Security.

### **Areas for Improvement**

**AFI-4-1:** There is no documented evidence of compensatory measures and duty limitations for STSMs who have not completed qualifications.

### **Strengths**

None

### **Noteworthy Information**

**N-4-1:** Content areas are missing in some of the site- and/or facility-specific qualification standards.

## **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**

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

### **Document Review**

- DOE O 426.1, *Federal Technical Capability*, 11-19-09
- NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facilities*, 05-19-08
- NSO O 426.1, *Technical Qualification Program Plan*, 02-16-10
- NNSA NSO Technical Qualification Program Monthly Status Report – Period Ending May 2010
- NNSA NSO *Final Report of the Technical Qualification Program Accreditation Self-Assessment*, October 2009
- NNSA NSO TQP Issues and Actions – Schedule and Status Tracking, 6/7/10
- TQP Records for the following positions/subject matter experts: FTCP Agent, Radiation Protection, Fire Protection Engineer, SQA/QA, Nuclear Safety Specialists (2), Environmental Compliance, Safeguards and Security (2), Waste Management, Technical Program Manager, STSM (2), Facility Maintenance Management, Electrical Systems, Facility Representative, Occupational Safety

### **Interviews**

- NSO FTC Agent
- NSO Training Manager/TQP Manager
- Fire Protection Engineer/Qualifying Official
- Radiation Protection Specialist/Qualifying Official
- SQA/QA Engineer/Qualifying Official
- Deputy Assistant Manager for Safety/Occupational Safety Qualifying Official

## **Discussion**

Criteria 5.1 Credit (equivalency) is granted for previous training, education, experience, and completion of related qualification/accreditation programs, where applicable.

The NSO TQPP allows for the use of equivalencies or “credit” for previous education, training, experience and/or certification and NSO has made extensive use of equivalencies in their TQP. A review of several TQP records indicates credit is granted through equivalency for education, certifications, experience and training. The NSO TQP requires a candidate to identify equivalencies or gaps during their self-assessment as part of the initial qualification process. Equivalencies are required to be documented on the NSO Competency Equivalency Evaluation Form which is submitted with an objective evidence package for review and concurrence by a Qualifying Official. The QO is supposed to evaluate the competency requirements on the qualification card against the objective evidence package and document the results of this evaluation on the Form. If the QO concurs that the equivalency satisfies the skill and knowledge statements associated with the competency, the QO signs the applicable competency on the card and provides the signed Form to the TQP Coordinator. This process, when effectively implemented, will provide a high level of rigor, scrutiny and assurance that equivalencies are granted when appropriate and with a clear basis that would ensure candidate qualifications are transportable.

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

There are numerous qualification cards for NSO TQP participants that used equivalency as the basis for meeting a competency. As acknowledged in NSO’s TQP Accreditation Self-Assessment, documentation that the QO verified the objective evidence for many of these equivalencies is lacking. In fact, given the evidence cited for specific competencies, it is unclear if equivalency was in fact the method used for competency completion or if the term was misapplied. The corrective actions taken in response to this issue from NSO’s TQP Accreditation Self-Assessment included adding a new form, the Competency Equivalency Evaluation Form, and training QOs on the process to be followed when evaluating equivalencies. No corrective actions were taken to reevaluate prior equivalencies granted for TQP participants. The lack of verified objective evidence for prior equivalencies is an issue with the potential to affect transportability of NSO’s TQP as discussed in Objective 6.

In several instances of equivalencies assessed since the NSO TQP Program Plan was revised and training was conducted, QOs evaluating these equivalencies did not consistently follow the process outlined in the program plan. Some but not all QOs made the effort to research and verify the evidence of completion listed for the equivalencies. In other instances, the QO instead chose to assess knowledge through an oral interview without necessarily granting full credit for the listed activities/training on the equivalency form. However, there was no documentation that this was the method chosen to determine the competency was met; the equivalency form was

signed by the QO implying the equivalency was granted on the basis of the listed activities/training.

In instances where a clear application of equivalency seemed warranted such as the Professional Engineer certification and prior qualification of the Fire Protection Engineer, it was not used by the QO. However, the determination was made by this candidate's supervisor to grant credit for prior certifications/qualifications in lieu of a final qualifying event (no comprehensive written exam or oral board was held for this candidate). Although this decision is not compliant with the NSO TQPP, this qualification activity was done prior to the issuance of the current version of NSO's TQP Plan.

Although there is clear guidance in NSO's current TQP Program Plan for the use of equivalencies, there is not a consistent and clear understanding on the part of the TQP participants and QOs on the application and evaluation of equivalencies.

#### Criteria 5.3 Equivalencies are formally validated, approved, and documented.

The process described in the NSO TQPP to validate, approve, and document the use of equivalencies is rigorous and will ensure equivalencies are consistently applied. However, it is clear the implementation of this process is deficient and not clearly understood by some NSO TQP participants and QOs. Recent applications of the use of the Competency Equivalency Evaluation Form were reviewed and found to be discrepant with the intended use as documented in the NSO TQPP. The TQPP requires the TQP participant to fill out the top half of the form and attach an objective evidence package which is then provided to the QO. The QO is supposed to review the objective evidence package and fill out the evaluation section of the form describing the results of their evaluation of the evidence. For those Competency Equivalency Evaluation Forms reviewed, the candidate filled in the Evaluation section with a listing of training courses, certifications, and/or experience they were citing as the basis for equivalency. The QOs did not clearly document the results of their evaluation of the equivalency on the Form. Only one QO made handwritten notes in this section; all other QOs stated they did not make or keep notes of their discussions/evaluation and one QO stated there was no requirement to document or summarize their evaluation. Discussions with several QOs made it clear their assessment of candidate equivalencies will vary dependent on their personal knowledge of the candidate's demonstrated performance. Several QOs performed a short training session in addition to a question and answer session before signing off on the Form and the competency. Furthermore, as identified in Objective 1, the use of equivalencies for an STSM requires the Agent's approval. In this case, since the Agent is the candidate under evaluation, it would be logical for the next higher STSM to approve the use of equivalencies for the Agent. No such approval or documentation was completed.

#### **Area for Improvement**

**AFI-5-1:** There is not a consistent and clear understanding on the part of the TQP participants and QOs on the application and definition of equivalencies.

**Strengths**

None

**Noteworthy Information**

None

## **OBJECTIVE 6**

**Team Member(s):** Edna White

**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**

- DOE O 426.1, DOE Federal Technical Capability, dated 11-19-09
- DOE M 360.1-1B, Federal Employee Training Manual
- NA-1 M 426-1-1A, Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facility, dated 05-19-08
- Technical Qualification Program User's Guide, Revision 2, dated July 2009
- NSO O 426.1, Technical Qualification Program Plan, dated 02-16-10
- NSO M 426.1-1A, Technical Qualification Program Plan, dated 11-12-08
- NSO Site Specific Qualification Standard, Technical Qualification Program, dated October 2009
- NSO O 111.XH, Functions, Responsibilities, and Authorities, dated 05-11-09
- Vacancy Announcements
- Position Descriptions
- Individual Development Plans
- TQP Participants Training and Qualification Records
- NSO TQP Self Assessment, January – February 2008
- NSO Final TQP Accreditation Self-Assessment, October 2009
- Final Corrective Action Plan, November 2009
- Training Record Summary Sheets from the DOE Employee Self Service webpage

### **Interviews**

- NSO TQP Support Service Contractor
- NSO Training Manager/TQP Manager
- TQP Participant -- Quality Assurance, Software QA, and Weapons QA
- TQP Facility Representative -- Radiation Protection
- TQP Participant -- Environmental Compliance
- TQP Participant -- Environmental Restoration

### **Activity Observations**

None

### **Discussion**

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

The DOE O 426.1 states that competency requirements identified as having Department-wide applicability must be transferable. A review of the qualification cards and interviews with the NSO TQP Program Manager and the NSO Senior Training Support Services Contractor indicates that each TQP participant receives a package, which includes the General Technical Base, Functional Area Qualification, and the NSO Site Specific Qualification standards. Some TQP participants are required to complete a Facility Specific Qualification Standard. The NSO TQP Manager also provides a briefing on the Technical Qualification Program requirements to all participants. A sampling of the qualification standards competencies indicate that the competencies level of knowledge (familiarity, working and expert) are applied appropriately as identified and documented on the qualification cards. The TQP Manager stated NSO has not had an employee transfer his qualification from another site during his tenure. A review of the TQP records revealed that one employee had transferred his qualifications (Fire Protection Engineer) from the Hanford site. However, the participant completed a new qualification card but was not required to complete a written examination or final qualifying activity, which is conflict with the NSO TQPP. The TQP Manager has provided TQP qualification records for two participants that transferred to the Oak Ridge Operations and Los Alamos Site Offices.

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

The NNSA Manual NA-1 M 426.1-1A describes the process to transfer TQP qualification from other offices. The goal is to accept qualifications from other offices because it supports the principles of transportability and avoid significant training cost and enable employees to contribute sooner to the accomplishments of the DOE's mission. Acceptance of the transferred qualifications is at the discretion of the QO. The NSO TQP Support Services Contractor maintains a copy of TQP records (qualification cards, certificates, equivalency justifications, written examination and oral board results, etc.). The NSO O 426.1 also states to ensure

transportability of technical qualifications across the Department, NSO will use the GTBQS and FAQs without modification or additions.

The NSO TQPP requires each participant to maintain a copy of their qualification cards, certificates, etc. Interviews with four TQP participants states that they were presented with a binder to keep their TQP documents. A review of these binders found that each participant binder contained their GTB, FAQs and Site Specific qualification cards and the participants adequately maintained their records.

A review of TQP participant training and qualification records indicated that while some of the packages were very well documented with each competency clearly addressed as to the manner of evaluation and the level of documentation supporting that, others were not. There are numerous qualification cards for NSO TQP participants that used equivalency as the basis for meeting a competency however based on a review of the records it is unclear if equivalency was in fact the method used for competency completion or if the term was misapplied. The corrective actions taken in response to this issue from NSO's TQP Accreditation Self-Assessment included adding a new form, the Competency Equivalency Evaluation Form, and training QOs on the process to be followed when evaluating equivalencies. However, no corrective actions were taken to reevaluate prior equivalencies granted for TQP participants. The lack of verified objective evidence for prior equivalencies is an issue with the potential to affect transportability of NSO's TQP.

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

Position descriptions and performance plans were reviewed for several TQP participants. Some discrepancies in position descriptions were identified such as not including a requirement to achieve or maintain qualification in the TQP. A vacancy announcement for an STSM position was reviewed. It correctly identified the position as one in the TQP in the STSM functional area but there is no evidence to demonstrate the FTCP Agent concurred with the vacancy announcement or with the candidate selection as required by DOE O 426.1. This issue also addressed under AFI-3-3. As part of the vacancy fill process, NSO is required to fill out a checklist per NNSA/SC/OHCMS procedure for all postings which requires the FTCP Agent to coordinate on vacancy postings for positions under the TQP. No evidence was provided for the vacancy package for the review to substantiate that the FTC Agent has fulfilled this responsibility.

Performance plans for 15 different TQP participants were sampled and several discrepancies were identified. Examples of these discrepancies include: the performance plan for the Agent did not include performance measures related to his role as the Agent; the performance plans for two employees in the Safeguards and Security FAQ allow 24 months for completion of their TQP without an approved extension beyond the maximum allowable completion time of 18 months as prescribed in the NSO TQPP. One of these individuals has been qualified since 2007

so it is unclear why this individual had a performance measure related to *completing* his qualification. Two other performance plans for individuals in the TQP did not have specific measures related to TQP. Per the NSO TQPP, the immediate supervisor is responsible for ensuring TQP responsibilities are included in individual performance plans; this responsibility is not being consistently performed.

**Area for Improvement**

**AFI-6-1:** The lack of objective evidence supporting competency evaluations for some legacy records may impact transportability.

**Strength**

None

**Noteworthy Information**

**N-6-1:** Some Position descriptions and Performance Plans do not incorporate the Technical Qualification Program.

## OBJECTIVE 7

**Team Member(s):** Ali Ghovanlou and Bob Seal

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

### Criteria

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

### Document Review

- NSO Operating Plan
- NSO Qualifying Official list
- TQP Qualifying Officials Briefing
- NSO TQP Accreditation Self-assessment February 2008
- NSO TQP Accreditation Self-assessment October 2009
- TQP CAP for Accreditation Self-assessment October 2009
- NSO TQP Status Monthly Report (June 2010)
- FRs, SSOs, STSMs, SME's Qualification Cards
- Technical Qualification Program Plan, NSO O 426.1 2-16-10
- 2007 FR Program Self Assessment
- 2009 FR Program Self Assessment
- Corrective action packages for resolving issues for 2009 FR Assessment (scheduled)
- SSO Program Assessment
- Corrective action packages for resolving issues for SSO Assessment (scheduled)
- Evidence files for verification of individual competencies
- Evidence file for final qualification of TQP participant by senior managers

### Interviews

- 3 FRs
- FR Supervisor
- Previous FR Supervisor

- NSO Training Manager/TQP Manager
- 3 Qualifying Officials
- NSO TQP Support Service Contractor
- Deputy Assistant Manager for Safety

### **Activity Observations**

- Walk-down of U1A Facility

### **Discussion**

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

Overall, the NSO TQP participants have the required competencies to perform their assigned functions. This was verified by the Team through examination of records and interviews with senior managers, supervisors and technical staff including, FRs, SSOs, STSMs, and SMEs. The Team also reviewed records of completed training, qualification expectations identified in standards, records of individual accomplishments, final evaluation interview documentation, and the TQP program requirements.

In addition, the Team conducted a walk-down of the U1A facility (Underground facility used for sub-critical experiments) with a facility Representative and the NSO TQP Manager to observe FR's interaction with facility personnel and facility systems. The FR had developed a personal checklist based on DOE and Contractor documents to assist him in evaluating conditions identified during operational awareness activities. The FR was qualified in all applicable TQP areas, including completion of the Underground Operations, and Facility Representative Office / Facility Specific GAP Qualification Card, and demonstrated good technical knowledge of the facility and its operations, and had established a good working relationship with the Contractor.

Interviews were conducted with two fully qualified FRs who ranged in experience from newly qualified to one with many years of experience. These FRs demonstrated an excellent understanding of their FR role, including the duties and responsibilities associated with overseeing Contractor activities. TQP records for other disciplines were sampled, and several other technical staff and managers in the areas of Operations, Fire Protection, and Senior Technical Safety Manager were interviewed to determine their technical competency. All 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.

Review of qualification cards for several FRs, SSOs, STSMs and SMEs and interviews with QOs indicated that the process for verification of individual competencies in GTB, FAQss, and site/facility specific areas are in full compliance with the requirements of DOE O 426.1A and its flow down to the NSO procedure. Mechanisms for verification of competencies used at NSO

include written exams, oral evaluations, observation of task, activity performed by the candidate as well as use of equivalency process. A careful examination of the implementation of the process for verification of competencies for FRs and SSOs led to identification of two areas of improvements described below.

The practice of using a prepared PowerPoint facility safety system briefing as part of an SSO evaluated walkthrough competency examination does not provide an opportunity of the candidate to demonstrate retained knowledge.

The evaluated walkthrough records associated with SSO qualification on the Device Assembly Facility Emergency Lights, UPS, and Standby Diesel were reviewed. The evaluated walkthrough package was a 20 page document that consisted of five detailed questions and expected responses, and five questions/discussions that took place while touring the facility. The record indicates the five major questions associated with the evaluated walkthrough were not asked and answered during the actual walkthrough, but were presented in a pre-prepared PowerPoint presentation by the candidate two weeks prior to the evaluated walkthrough. Of the five questions/discussions occurred during the evaluated walkthrough, two (40%) were determined to include incorrect information or did not include sufficient information to warrant a passing grade of 80%. Based on a review of the evaluated walkthrough documentation it is not evident that the evaluated walkthrough for this SSO qualification was conducted in the manner intended, or that the process used allowed the SSO candidate to demonstrate that he had sufficient knowledge of current system status to justify qualification. A follow-up interview with one of the team members who conducted the walkthrough indicated that questioning did extend beyond those recorded in the evaluated walkthrough documentation. The team member stated that information obtained during the additional questioning was the basis for the team to assign a passing grade.

The evaluated walkthrough records associated with SSO qualification on the Device Assembly Facility Fire Suppression System, Fire Detection, and Alarm System were also reviewed. Similar to the SSO qualification on the Device Assembly Facility Emergency Lights, UPS, and Standby Diesel, a prepared PowerPoint briefing was utilized. A noted difference in this walkthrough examination was that additional questions were asked when the briefing given by the candidate did not address all of the items listed in the desired response. Three additional questions were asked during the evaluated walkthrough including, purpose and operation of a fire riser, discuss fire system sprinkler head design and operation, and explain the operation of the Fire Alarm Panel and Smoke Detector. These questions were very basic, did not appear to be safety system related, and were easily answered by the candidate who was a Professional Engineer in Fire Protection.

Although the same prepared briefing process was used during this evaluated walkthrough, follow up questioning on the prepared questions provided an opportunity to test retained knowledge. However, the additional questions asked during the evaluated walkthrough were very basic and did not specifically apply to SSO qualification.

The Facility Representative requalification process has not been implemented in accordance with DOE O 426.1. A review of FR training records did not identify any evidence that requalification of FRs at NSO has been conducted in accordance with DOE-STD-1063-2006.

The training record for one FR did not support that initial FR qualification for Underground Operations had occurred in 1998. However, the accreditation team accepted testimony from the FR and another employee who was involved with underground operations during that timeframe that initial FR qualification had in fact occurred. There is no record that the FR requalified at that facility following initial qualification in 1998, and in June 2010 the FR completed a “GAP” qualification card for that facility and was designated as qualified. That process is not in accordance with DOE-STD-1063-2006 which requires that, at the time of requalification the FR will be currently fully qualified and meet proficiency requirements at the assigned facility or facilities. Because the FR had not maintained Underground Operations qualification through the requalification process the qualification should have been conducted as though it was an initial qualification.

DOE O 426.1, Section 4.b. (6)(c), Maintenance of Qualifications states the requalification period for FRs is addressed in DOE-STD-1063-2006, *Facility Representatives*, and that personnel who fail to complete the identified requalification requirements by the end of the requalification period may be granted a six month extension for requalification by the respective FEM, provided that compensatory measures are identified and implemented to allow them to continue to perform their duties safely. If the requalification requirements are not completed within the six month extension, such personnel must be removed by the respective FEM from duties requiring qualification. DOE-STD-1063-2006, Section 5.5.6 Requalification, requires the following: “At the time of requalification the Facility Representative will be currently fully qualified and meet proficiency requirements at the assigned facility or facilities.

The NSO TQPP defines the term requalification, but states that requalification will only be done if it is required by the applicable QS, and that the FTC Agent may revise or extend the requalification period when conditions exist to warrant an extension. That policy is not in accordance with DOE O426.1. The NSO TQPP does not define a requalification program that can be effectively implemented. Instead of establishing a consistent and effective requalification process across the organization the document assigns full responsibility for requalification on individual employees by stating that specific requalification requirements are prescribed in approved QSs, and that those employees will refer to their respective QSs to determine their specific requalification requirements and will accomplish their requalification requirements as prescribed. However, FR requalification elements including ensuring timely requalification, dealing with administering compensatory measures due to failure to pass exams or delays in meeting qualification requirements must be part of an institutional process for which FEM or his formal designees are directly responsible.

Criteria 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.

Through the combination of methods described below it is evident that NSO actively seeks and embraces TQP feedback to implement TQP continuous improvement in support of NSO mission accomplishment and the needs of the Department. Expectations for TQP participants' feedback to the TQP Coordinator is proceduralized in the NSO TQP Plan. Specifically TQP participants are expected to provide feedback and recommendations for improvement of the NNSA/NSO TQP using a standard Form (Attachment 12 of NSO TQP Plan), or similar mechanisms they may prefer. The commitments of the organization subsequent to receiving feedback are documented in the TQP Plan:

- The NNSA/NSO TQP Coordinator will evaluate the feedback and initiate revisions to the process as necessary
- The NNSA/NSO TQP Coordinator will also evaluate feedback for lessons learned and initiate appropriate action.
- TQP participant feedback will be maintained in the official training records.

Review of a sampling of records for personnel who have completed the final evaluation activity after the procedure was issued in February 2010, and the requirement instituted identified 19 Feedback and Improvement Reports in the files. Interviews with NSO Training Managers revealed that capabilities have been developed to analyze and take corrective actions in response to the feedback received. The 19 reports received and analyzed had not yet led to any corrective action.

At NSO, similar to other sites across the Department, 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.

The NSO Corporate Procedure for Corrective Action Management requires updating to reflect current management expectations for preparing corrective action plans and managing action completion. As a result in addition to feedback received in response to events, and activities, periodic evaluations including self-assessments, external reviews, and requested assist visits provide feedback and improvement information. A number of such activities had been conducted at NSO during the last several years, including:

- FR Program Self-assessments in 2007 and 2009.
- A number of engineering assessments of safety systems of the Device Assembly Systems (DAF) in December 2009, and January 2010.

In general, issues identified during these assessments have been appropriately analyzed, and prioritized. Selected corrective actions reviewed by the Team were found to be well formulated, actionable, and were tracked in caWeb, a capable issue management system by NSO Performance Assurance System organization. Open issues are routinely reported to management including days the closing of the issue are overdue.

In addition to assessments listed above NSO performed two self-assessments in preparation for this TQP Accreditation Review in 2007 and 2009. The Team's review of the findings and OFIs of the 2009 assessment and corrective actions revealed a number of weaknesses. There is no evidence that the development of the corrective actions was based on rigorous analysis and full understanding of the basic causes of the weaknesses identified in the assessment report. In addition, the Team also discovered weaknesses in implementation and effectiveness of completed corrective actions. For example, three issues (OFI-TQP-4.1, F-TQP-1.1, and F-TQP-5.1) associated with weaknesses in the QOs program that are considered completed according to records kept by the Training Manager. The corrective action package provided to the Team consists of a training presentation for QOs, and two Forms, "NSO TQP Competency Equivalency Evaluation Form", and "NSO TQP Qualification Evaluation Form". A review of the corrective actions by the Team revealed a number of weaknesses in the analysis of the issues identified in the assessment report and the corrective actions implemented. Also the Team identified a number of deficiencies in the QO program, demonstrating that corrective actions implemented are not fully effective in improving the QO program. Similar observations were made for other findings and OFIs.

Tracking of corrective actions and documentation of objective evidence is accomplished utilizing a local spreadsheet developed by the Training Manager. This tool is not robust enough for future expansion when necessary and does not provide the capability for documentation of detail analysis, effective tracking of issues and management reporting.

### Criteria 7.3 The TQP provides for continuing training.

The requirements for TQP continuing training process are described in NSO TQP Plan. It is the expectation of the TQP plan for TQP participants to participate in continuing education and training, particularly in areas necessary for maintaining current knowledge of the laws and directives referenced in their qualification packages. NSO has accomplished this objective through the implementation of the NNSA Service Center Continuing Training process.

Interview with the TQP Manager, and review of selected Continuing Training packages demonstrate that the NNSA Service Center process, and tools as described in the Continuing Training User's Guide has generally been appropriately and effectively implemented. The process however could be further improved through inclusion of site/facility specific training requirements, as is currently planned by the Training Manager. A positive step, implemented by the Training Manager beyond the requirements of the NNSA Service Center process is tracking of the continuing training status for CY 08, 09, and 10 as an input into the Training Needs Analysis, and funding decisions that ensure TQP related trainings are given appropriate level of priority. Even though the overall continuing training program is positive the FR continuing training is an area of improvement as described in what follows.

NSO has not implemented a continuing training process for Facility Representatives that is compliant with DOE-STD-1063 or NSO O 426.1 requirements. Continuing training for Facility

Representatives is defined and described in DOE-STD-1063-2006, *Facility Representatives*, and is implemented at NSO by NSO O 426.1.

The triennial self assessment of the NSO FR program completed in 2007 included a Finding that the NSO FR continuing training procedure had not been implemented. The triennial self assessment of the NSO FR program completed in 2009 included a Noteworthy Practice that the FR continuing training program exceeded expectations. That determination was made based on the fact that the acting FR Group Leader assigned topics to FRs and monitored completion in e-Pegasus and because topical assignments and instructional guidance were relevant and provided FRs with practical information. However, that process was not formalized and was lost when the acting FR Group Leader was replaced.

DOE-STD-1063 states that Field Element Managers should establish a continuing training program to enhance and strengthen the knowledge, skills and abilities of FRs to ensure they are aware of significant new hazards or activities they may encounter during the performance of their duties, and to provide a mechanism to share lessons learned from facilities on the site and across the complex. Additional guidance and examples relating to continuing training is included in Appendix D of the Standard.

The NSO TQPP requires that the NSO TQP Manager maintain the requalification and continuing training program and tracks the progress of requalification activities. Currently NSO maintains a spreadsheet titled *NSO TQP Continuing Training Status*, which the accreditation team reviewed and evaluated.

The NSO FR Continuing Training Program is implemented by the NSO TQPP. The stated goal of the NSO continuing training program is to maintain and enhance the FR's ability to perform job assignments and to prepare for requalification. The program consists of basic engineering fundamentals, knowledge, and skills required for safe operations, regulatory compliance requirements, facility-specific topics, industry operating experiences, performance problems, facility modifications, and procedure changes. The program is designed to ensure the three-year limit for requalification is not exceeded.

A review of *NSO TQP Continuing Training Status* for calendar years 2008, 2009, and 2010, for the six employees currently serving in FR positions indicates that continuing training has been inconsistently applied and has been provided on an individual basis rather than on a FR programmatic basis. Information included on the spreadsheet indicates some form of quarterly TQP training was conducted in calendar year 2008, but not all FRs who were qualified at that time attended the training. The record indicates that in calendar year 2009 two FRs received safety basis training and NSO-wide TQP continuing training that was not specific to FRs. However, not all FRs who were qualified during calendar year 2008 received the training.

The continuing training process for FRs described in DOE-STD-1063 to enhance and strengthen the knowledge, skills and abilities of FRs, to ensure they are aware of significant new hazards or activities they may encounter during the performance of their duties, and to provide a mechanism

to share lessons learned from facilities on the site and across the complex has not been demonstrated at NSO.

**Area for Improvement**

AFI-7-1: Facility Representative requalification is not in accordance with the requirements of Standard 1063

AFI-7-2: FR continuing training is no longer being implemented to meet the Standard 1063 continuing training requirements.

AFI-7-3: The issues from the TQP Accreditation Self Assessment in 2009 were not fully analyzed and a number of corrective actions not effectively implemented.

**Noteworthy Information**

N-7-1: The rigor and documentation of the SSO evaluated walk-down process for final qualification needs improvement.

## **APPENDIX B – NSO TQP ACCREDITATIONS REVIEW TEAM MEMBERS**

### **Ray Corey – Team Leader**

Ray Corey currently serves as the Assistant Manager for Safety and Environment at the DOE Richland Operations Office. Current duties include oversight of environmental, safety, health, transportation, and quality assurance programs at the Hanford site, including management of the DOE RL facility representative and safety system oversight programs, site-wide environmental permitting and safety programs, and nuclear safety basis reviews. Mr. Corey currently manages approximately 70 federal employees.

Prior to his assignment to DOE Richland in August 2008, Mr. Corey served for 5 years as the Associate Director of Technical Services for the National Nuclear Security Administration (NNSA) Service Center where he managed technical support to NNSA Headquarters and Site Offices include environmental, industrial and nuclear safety, package certification and transportation management, program and project management, and technical security. Mr. Corey was responsible for approximately 120 federal employees. During this time, Mr. Corey played a key role in obtaining Technical Qualification Program accreditation for the Service Center.

Mr. Corey was also employed for 13 years at the former DOE Oakland Operations Office. His duties there included Deputy Site Manager and Site Manager, where he was responsible for the management oversight of the Lawrence Livermore National Laboratory (LLNL) including contract administration, safety and security operations, construction, and Defense and Nonproliferation Programs. Mr. Corey was responsible for approximately 100 federal employees at the Livermore Site Office with a LLNL budget of about \$1.3B.

Mr. Corey has been employed by the U.S. Department of Energy since 1989. While at DOE, he has held positions as an environmental engineer, Chief of the Waste Management Operations Branch, Deputy Assistant Manager for Environmental Management, and the Deputy Assistant Manager for National Security. Mr. Corey has also been employed as an environmental engineer by the U.S. Environmental Protection Agency and the Lawrence Livermore National Laboratory.

Ray Corey received his bachelor's degree in Environmental Engineering from New Mexico Institute of Mining and Technology in 1985 and a bachelor's degree in Political Science from the University of New Mexico in 1981. Mr. Corey is a charter member of the New Mexico Tau Beta Pi Gamma Chapter, a national engineering honorary society.

### **Mark Alsdorf – Team Member**

Mr. Alsdorf has over 35 years of nuclear missile operations and training development experience, and managing and providing technical support for a wide range of operational projects for DOE, industry, and other government agencies. In October, 2007, he joined the Department of Energy as the NNSA Technical Qualification Program Manager. He coordinates all aspects of the NNSA Technical Qualification Program (TQP) with the NNSA Federal Technical Capability Panel (FTCP) lead agent, working closely with the NNSA Service Center and site office FTCP agents to ensure program consistency. He oversees the integration, effective implementation, and administration of the corporate NNSA TQP. Since joining NNSA, he has participated in seven TQP self-assessments and numerous TQP assistance visits. Prior to joining NNSA, Mr. Alsdorf managed the training program at the Los Alamos

Site Office (LASO) in the development and production of training program administration procedures, qualification standards, and qualification cards for LASO Facility Representative positions and all aspects of LASO TQP implementation as a Senior Engineer for Epsilon Systems Solutions, Inc. Additionally, he supported the LASO Operational Readiness Review of the Radio-Assay Non-Destructive Test Facility.

### **Ali Ghovanlou – Team Member**

Dr. Ghovanlou received an MS in Experimental Solid State Physics from University of Mainz in Germany and subsequently a Ph.D. in Theoretical Nuclear Physics from George Washington University. After a period of postdoctoral work and teaching, he accepted a position at the MITRE Corporation in 1974. During a twenty-one year career at MITRE he served in a variety of roles including the Consulting Scientist of the Command, Control, Communication, Intelligent Division supporting US military and Technical Director of civilian Space Systems Division. As Technical Director of Space Systems Division, Dr. Ghovanlou directed activities of 250 scientists and engineers. The division's work program was designed to improve NASA's productivity by developing new tools for assessing performance of NASA's large-scale operations, and by introducing advanced information technologies to automate ground and space operations. In March 1995, Dr. Ghovanlou accepted an Excepted Service position with the Department of Energy. He is currently serving as the Senior Technical and Policy Advisor in the Office of Health and Safety. Dr. Ghovanlou has served the Department in a variety of activities related to environment, health and safety, including participation in numerous independent oversight inspections, and technical qualifications and training programs.

Before joining the Department of Energy, Dr. Ghovanlou has had affiliations with a number of professional organizations, universities and National Laboratories including:

- American Institute for Aeronautics and Astronautics (AIAA) - Associate Fellow
- IEEE - Senior Member
- Professorial Lecturer in Physics, George Washington University
- AIAA- Director of Aerospace Sciences Group on Standards
- Member of CODATA committee, National Research Council Chairman of Advisory Board of the Computational Sciences and Informatics of George Mason University (July 1991- August 1993); Member of the Board
- Member and subsequently Chairman of the Technical Advisory Committee of the Mechanical and Electronic Engineering Division of Los Alamos National Laboratory
- Member of Energy and Environment Directorate Advisory Committee of Los Alamos National laboratory.
- Chaired and served on a number of AIAA Technical Committees

### **John Krepps – Team Member**

John Krepps graduated in 1983 with a Bachelor of Science in Engineering from the United States Naval Academy in Annapolis, Maryland. Following Naval Nuclear Power School and Prototype Training, he served as a Nuclear Trained Submarine Officer on board the USS John C. Calhoun, SSBN 630. During this tour of duty, he participated in an 18 Month Refueling Overhaul and made 4 Strategic Deterrent Nuclear Patrols. He held assignments as Electrical Division Officer, Reactor Control Assistant, and Communications Officer.

In 1988, he resigned his commission and began employment with the prime contractor at the Savannah River Site (SRS) in Aiken, South Carolina. From 1988 to 2005, he held assignments in numerous

divisions and facilities including K-Reactor Restart, Spent Fuel Storage, Heavy Water Facility, Receiving Basin for Off-Site Fuel, F-Canyon Separations, and FB-Line Plutonium Processing Facility. His assignments at SRS included Reactor Maintenance and Technical Staff Training Manager, Spent Fuel Division Training and Procedures Manager, Operations Support Manager, Readiness Assessment Manager, Safety Management Engineering, and Conduct of Operations Advisor.

In 2005, he began contract work at the Los Alamos National Laboratory. He supported the Environment and Waste Management Facility Organization at the Radioactive Liquid Waste Treatment Facility (RLWTF) and the Waste Characterization Reduction and Repackaging Facility (WCRRF). At RLWTF, he coordinated the readiness and restart of TRU Waste Processing activities and the Caustic Tank Replacement Project. At WCRRF, he served as a Conduct of Operations Advisor to prepare the facility for a DOE Operational Readiness Review and was assigned as a Senior Supervisory Watch to oversee the safe repackaging of High Activity TRU waste.

He began employment with the DOE in February 2008 and is currently assigned as a Facility Representative at the TA-55 Facility. He was selected as the NNSA Facility Representative of the Year for 2009.

### **Ed Parsons – Team Member**

Mr. Parsons is currently serving as the Senior Technical Advisor for Radiological Health and Safety, Office of Engineering and Safety, Richland Operations Office (RL), Department of Energy. He has 33 years of diversified experience in the nuclear industry, including commercial nuclear power operations, industrial and commercial power decommissioning, the national weapons program, project and departmental management, medical health physics and technical consultation. Mr. Parsons has been involved in a variety of activities in the nuclear industry such as the accelerated high yield nuclear weapon test program, various nuclear power plant operations, medical health physics consultation, international decommissioning consultation, and data management system development for both radiation protection and security information management.

Mr. Parsons has also served as technical expert to the International Labor Organization during the ratification of the International Atomic Energy Agency's *International Basic Radiation Safety Standards* and member of the technical council for the development of IAEA's safety guide *Occupational Radiation Protection in the Decommissioning of Nuclear Facilities*.

Along with serving as the senior technical advisor for radiological health and safety, Mr. Parsons also serves as the integrated safety management subject matter expert for RL. Mr. Parsons recently participated as the co-chair in the development of the new integrated safety management order. Additionally, Mr. Parsons also serves as the Federal Technical Qualifications Program point of contact for the Richland Operations Office. Mr. Parsons has served in a variety of capacities on ten previous ISM verifications and two Federal Technical Qualifications Program accreditation reviews.

### **Bob Seal – Team Member**

Mr. Seal currently serves as the Department of Energy Idaho Operations Office (DOE-ID) Facility Representative (FR) Program Manager, the DOE-ID Nuclear Energy FR Team Lead, and was selected as the 2006 DOE Departmental FR of the Year. As the DOE-ID FR Program Manager he is responsible for administering the Technical Qualification Program as it applies to DOE-ID FRs. He has over 43 years of nuclear experience, including 19 years as a DOE FR and Site Representative, and 24 years in the U.S.

Navy Nuclear Propulsion Program. He has led or served on numerous teams conducting assessments, readiness reviews, and accident investigations at DOE-ID and across the DOE Complex. He graduated *summa cum laude* from the University of Idaho with a Bachelor of Science in Industrial Technology (Waste Management), and received a Master of Science from the University of Idaho in Industrial Technology Education (Safety).

### **Denise Webb – Team Member**

Ms. Webb currently serves as Manager of the Nuclear Safety Support Division, responsible for supervising a team of technical specialists providing nuclear safety support to NNSA Headquarters and Site Offices for Safety Basis Reviews, Operational Readiness Reviews/Assessments, Design Reviews, and Programmatic Safety Assessments.

Prior to this position, Ms. Webb served as a Nuclear Safety Specialist providing safety bases support for the NNSA complex. She has provided subject matter expertise on a number of safety basis review efforts for several NNSA site offices to include Pantex, Nevada, Savannah River, Los Alamos, Lawrence Livermore, and Sandia. She has served as a Safety Basis Review Team leader and has extensive experience assessing a variety of nuclear safety hazards including fires, lightning, earthquakes, vehicle accidents, and safety system failures. She also has experience with performance-based reviews serving as a deputy team leader for the Sandia Pulsed Reactor Facility Operational Readiness Review and as a team member for the Chief Defense Nuclear Safety Biennial Reviews of the Livermore and Y12 Site Offices, the Operational Readiness Review of the new Highly Enriched Uranium Materials Facility, and the TQP Accreditation Review for the Sandia Site Office.

Prior to joining NNSA, Ms. Webb supported the Air Force Safety Center (AFSC) as a nuclear weapon systems engineer providing technical assessments and evaluating new modified nuclear weapon system designs for compliance with nuclear surety standards and requirements. Ms. Webb holds a BS and MS in Electrical Engineering and is a qualified Senior Technical Safety Manager.

### **Edna White – Team Member**

Ms. White is a Management and Program Analyst in the Office of Technical Services, NNSA Service Center (SC), and serves as the Technical Training Coordinator with responsibilities that include: ensuring training is identified and communicated to the Technical Qualification Program (TQP) and TQP-Like participants; and supporting the NNSA/SC Federal Technical Capability Panel (FTCP) Agent in the overall effectiveness of the NNSA/SC TQP. In 2007, Ms. White was designated as the project lead to prepare for the NNSA/SC TQP Accreditation Evaluation, which was subsequently granted by the Deputy Secretary on November 24, 2008.

Ms. White is also the FTCP coordinator, responsible for coordinating and communicating the activities of the FTCP throughout DOE and NNSA. Ms. White's assignments include supporting the FTCP Chair by ensuring the monthly conference call agendas and semi-annual Face-to-Face meetings are fully coordinated with the Chair and the FTCP Agents; and FTCP documents are of high quality and are disseminated on a timely basis.

Prior to joining the NNSA/SC, Ms. White served as the Directives Program Manager for the DOE Nevada Operations Office (DOE/NV). Directed and managed contractor support staff in the Directives Management Center. Directed and provided guidance to employees and groups on all phases of the

directives management functions. Participated on the Work Smart Standards Set team at DOE/NV and maintained the Baseline Change Control process for the Set. Ms. White was the designated subject matter expert on the Directives System to the Change Review Group. Ms. White was also the Contracting Officer Representative for the Administrative Support Service Contract.

Ms. White has a Bachelor of Science Degree in Business Management from the University of Phoenix and has over 25 years of Federal experience with the Department of Energy (DOE) and other federal agencies.

### **Mike Schoener – Advisor**

Mr. Schoener is the owner and a Principal Consultant with MAS Consultants Inc., an Aiken, SC firm that provides management, technical and organizational improvement services for commercial and government organizations. He has over 30 years of experience in the areas of management, facility operations, training, organizational development and facilitation. He provides management consulting services for electric utilities, process industries, craft labor unions and government agencies.

Mr. Schoener has been the manager of technical training at a commercial nuclear utility, manager of training and procedures assisting in the startup of a troubled DOE nuclear facility, and worked with executives at Ontario Power Generation to make significant organizational and programmatic improvements to upgrade the training and certification programs for their nuclear operations in Canada. He has been involved in numerous assessments and reviews at a variety of commercial and DOE nuclear facilities over the past 20 years – particularly in the areas of training, management systems, human performance and conduct of operations. Mr. Schoener has worked with senior managers at DOE in a variety of capacities. He developed the one-week, in-residence, Nuclear Executive Leadership Training (NELT) for senior DOE executives and has conducted management retreats for DOE executives in several different organizations. He managed the design and development of the initial DOE Technical Qualification Program (TQP) to upgrade the technical competence of the Federal workforce across the complex and worked closely with DOE to start-up the Human Performance Center. He is assisting NNSA managers with governance reform and served for eight years as the facilitator for the SRS Citizens Advisory Board.

Mr. Schoener has a Bachelor of Science in Construction Management from Bowling Green State University where he graduated Magna Cum Laude. He served six years in the Navy Nuclear Power Program. He is a member of the American Nuclear Society and the American Society for Training and Development. He is also a licensed residential builder.