

EXECUTIVE SUMMARY

An assessment of initial implementation of the Safety System Oversight (SSO) function at the Savannah River Operations Office (SR) was conducted by two DOE Senior Technical Safety Managers in late August 2004. The results of the assessment reveal that SR has implemented the SSO function in a manner so as to meet or exceed the requirements of the Federal Technical Capability Panel Manual, DOE M 426.1-1A. Line managers and SSO personnel understand the fundamental program objectives and are actively working to achieve those objectives in order to ensure the effective oversight of contractor management of safety systems at SR. No significant deficiencies were identified during this review. Opportunities for improvement include:

- The Draft DOE SR Technical Training and Qualification Program procedure, which describes SR's process for implementation of the SSO Qualification Program should be promptly revised and issued formally since all of the SSO candidates and their supervisors are currently following the draft procedure and the embedded qualification plans for actual formal qualification.
- Facility Representatives (FR) should be briefed on the SSO Program and its requirements, and introduced to the staff. Some FRs were unaware of the Program, and skeptical of its value as well as management's commitment to its success.
- The SSO program requires that one SSO be assigned per facility. Each SSO candidate is also the sole Authorization Basis (AB) expert for that facility. When questioned, some of the SSO candidates indicated that they would give AB activities their top priority due to contractual responsibilities (GFSI – spell out). Some SSO candidates did not fully understand the SSO requirements contained in DOE M 426.1-1A.
- Standard expectations should be developed and specified to ensure that the SSO, FR, AB, and Senior Technical Safety Manager (STSM) staff routinely communicate to share knowledge about facility safety system conditions and contractor performance. In some cases, SSO staff were co-located with FRs. This arrangement appeared to be a helpful in ensuring good communication and mutual respect between FR and SSO staff.
- Each SR AM should develop standard guidance, or training, that would be provided delineating duties, responsibilities and functions of the SSO program and how the SSO should dovetail with the FR and STSM as implemented at SR. Interviews indicated that SSO and FR staff would both benefit from such role clarity. [Note: A series of training courses during the period from August 31 through December 7, 2004 for SSO personnel (primarily) were designed, developed and have been/will be implemented. The first class, delivered in late August 2004, focused on the roles and responsibilities of SSO. This should not be identified as an area for improvement and any other sections of the report should be revised as appropriate.]

Several areas for continued management attention were identified:

- Striking the right balance between day-to-day work priorities, time allowed for qualifications, and quality/depth of work products. Although most SSO candidates understood the program's potential value, priority assigned to day-to-day work has adversely impacted qualification progress in some cases.
- Management attention and follow-through regarding SSO qualification and oversight activities is essential to the successful implementation of this program. Active involvement by line managers is a key element in ensuring SSO personnel understand expectations and provide feedback where process improvements may be necessary, and reinforces the importance of this program.
- Improving interactions between FRs, SSO staff, and line management. This includes establishing SSO credibility through an increased level of knowledge; management recognition of improvements when they are implemented; and taking maximum advantage of opportunities where FRs and SSO staff can work together to resolve day-to-day issues at SR.

INTRODUCTION

In May 2004, the Department of Energy (DOE) institutionalized the Safety System Oversight (SSO) function to monitor the performance of systems relied upon to assure safe operation of nuclear facilities and evaluate the effectiveness of the Contractor's Cognizant System Engineer (CSE) Program. The SSO function, including the roles and responsibilities of personnel assigned, are described in DOE M 426.1-1A, *Federal Technical Capability Panel Manual*. DOE M 426.1-1A also defines the knowledge, skills and abilities to be incorporated into technical qualification programs for personnel assigned the SSO function.

The objective of this review is to assess initial actions taken by the Savannah River Operations Office (SR) to implement the SSO function. The reporting format described in DOE M 426.1-1A was used to document the review results.

SCOPE and METHODOLOGY

The review was performed by the DOE Office of River Protection (ORP) Assistant Manager for Tank Farms and a qualified Senior Technical Safety Manager from SR. Criteria and Review Approach Documents (CRADs) developed by the Federal Technical Capabilities Panel (FTCP) were used to assess actions initially taken to define and implement the SSO function at SR. Full implementation at SR will be assessed by the FTCP before the end of CY05. The CRADs are located in Attachment A of this report.

The review was performed in two parts: an off-site assessment of SSO program documents developed by SR followed by on-site interviews with line management and personnel assigned SSO functions. The results of document reviews and interviews are

documented in the "Results" section of this report and broken out by the four CRAD functional areas: Program (PGM); Training and Qualification (TQ); Management (MG); and Oversight Performance (OP).

PGM, TQ and MG functional area assessments consisted of document reviews and management interviews to assess SR's actions to implement the SSO functions described in DOE M 426.1-1A. Since the SSO program has not been fully implemented, the OP functional area consisted of SSO personnel interviews to confirm their understanding of the requirements contained in the draft DOE-SR Technical Training and Qualification Program procedure and to assess actions being taken to provide this oversight. Abbreviated field walk-downs of installed systems were conducted to verify the initial knowledge and skills of personnel assigned to qualify in the SSO function. Field knowledge was very good, as observed in this limited sample.

Documents reviewed:

- DOE M 426.1-1A. "Federal Technical Capability Manual"
- SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0, "Draft DOE-SR Technical Training and Qualification Program" procedure (including attachments)
- SRM 300.1.1B, Chapter 1, Section 1.1, Part 1, "DOE-SR Functions, Responsibilities, and Authorities Procedure"
- Course Offering Announcements made by Helene Taylor on August 28, 2004 offering a series of six courses for SSO basic qualification needed by SR SSO candidates
- Facility-Specific Qualification Standards for 3 different FAQ's covering a range of site specific facilities.
- Office of the Assistant Manager for Nuclear Material Stabilization Project (AMNMSP), Nuclear Material Engineering Division (NMED) SSO staffing analysis
- Office of the Assistant Manager for Waste Disposition Project, Waste Disposition Engineering Division Vital Safety Systems (VSS) Ownership Matrix
- AMNMSP-NMED VSS Ownership Matrix
- Training records for SSO candidates and FR personnel interviewed
- Performance and Development Plans for two SSO candidates
- DOE-SR Safety System Oversight Designation, Draft 6-2-04.

Personnel interviewed included:

- Assistant Manager, Waste Disposition Project (AMWDP)
- Assistant Manager, Nuclear Materials Stabilization Project (AMNMSP)
- Director, Nuclear Materials Engineering Division (NMED)
- Director, Waste Disposition Engineering Division (WDED)
- SO (SSO?) Candidates (2), WDED
- SO (SSO?) Candidates (2), NMED
- Facility Representatives (2), Waste Disposition Operations Division (WDOD)
- Facility Representatives (2), Nuclear Material Operations Division (NMOD)
- Several members of SR Human Resources Management & Development Division (HRMDD) Several members of the NNSA-Savannah River Site (SRS) staff regarding their implementation of the training program (they had arranged to use the same program as the SR staff). (SR is all EM staff)

Abbreviated in-field walkdowns were conducted of two systems with SSO candidates in order to assess the current level of qualification knowledge and skills relative to the expected new knowledge and skills to be gained during SR SSO qualification processes. (Note: This paragraph needs to be clarified – what is the intent of comparing the current with the new competence levels?)

In addition, extended discussions were held with NNSA-SRS staff members responsible for SSO Program implementation and training in order to assist them in preparing for their upcoming SSO implementation assessment. (Note: Does this really need to be in here since it pertains to your assistance to NNSA-SRS and not necessarily anything to do with SR's implementation?)

RESULTS

Program (PGM)

The review performed under this functional area addressed actions taken by the SR AMNMSP and AMWDP to establish the SSO function and describe its implementation.

The SSO function established at SR is defined by SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0, "Draft DOE SR Technical Training and Qualification Program" procedure (including attachments). The procedure is still in draft form and should be promptly published with the approval of the Manager, SR. The procedure documents SR management's commitment to implement an SSO Qualification Program that is as rigorous as SR's FR Program. Section 5.13 of the procedure describes inclusion of SSO qualifications as part of the Technical Qualification Program. It includes subsections that describe expectations regarding training and qualification of SSO candidates, consistency between the SSO program and systems/programs assessed in the Documented Safety Analyses. Roles, responsibilities and authorities of personnel assigned SSO responsibilities are described in the procedure as well as in SRM 300.1.1B, Chapter 1, Section 1.1, Part 1, "DOE-SR Functions, Responsibilities, and Authorities Procedure". (FRAP). Roles, responsibilities and functions described in the draft procedure are consistent with the content of DOE M 426.1-1A.

Personnel assigned SSO responsibilities were identified in DOE-SR Safety System Oversight Designation, Draft 6-2-04. This document should be formalized and promptly issued.

Interviews were conducted to assess the overall understanding of the SSO role. Assistant Manager expectations were generally consistent with the SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0 "DOE-SR Draft DOE SR Technical Training and Qualification Program" *procedure* (including attachments). Line management expected personnel assigned SSO responsibilities to have a level of knowledge similar to contractor CSEs for assigned systems and programs, but the frequency and depth of their oversight reviews would be less than those of the full time CSEs assigned by the contractor. There may be situations when the depth of the DOE review would be as deep, or even deeper, than that of the CSE but this would be a special case and occur on an infrequent basis. This meets the intent of DOE M 426.1-1A.

Staffing actions were discussed with supervisors to determine how current and future SSO staffing needs were being met and maintained.

Training and Qualification (TQ)

The review performed under this functional area addressed actions taken to ensure SSO personnel and supervisors with responsibilities for SSO personnel, have begun appropriate training and qualification. SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0 Section 5.11, of the Draft DOE-SR Technical Training and Qualification Program procedure (including attachments), requires supervisors with SSO responsibilities to maintain STSM qualification. Each of the supervisors with SSO candidates assigned was STSM qualified or in qualification (What does "in qualification" mean?)

A sample of qualification records were reviewed for SSO, FR, and STSM personnel interviewed. No discrepancies were observed:

Actual qualifications were reviewed for supervisors with responsibilities for SSO personnel. All SSO supervisors hold the STSM qualification. The same review was done for SSO candidates. All SSO candidates are assigned to positions that require qualification under a TQP functional area in addition to being required to qualify under the SSO Qualification Program. Each SSO candidate has completed General Technical Base (GTB) and Functional Area Qualification (FAQ) generic and site/facility specific qualifications.

Achieving SSO qualification at SR requires completion of a combination of self-study and classroom training. The process that SR has set up for completing the initial generic parts of the SSO qualification is exemplary and could reasonably be transported to other sites. The remainder of the qualification program is left to the initiative of each candidate to complete. SR supervisors have established qualification dates and a system for tracking qualification progress.

Interviews were conducted with supervisors and SSO candidates to determine how the need to perform SSO qualification and actual current SSO activities is balanced against their routine duties (usually the job of the facility AB person). There was a lack of understanding of the requirements of DOE M 426.1-1A, in that the SSO candidates prioritized their routine job activities above that of the SSO duties and responsibilities. No other issues were noted.

Management (MG)

The review performed under this functional area assessed actions being taken to ensure SSO supervisors effectively perform their responsibilities. SSO qualification cards have been developed for safety systems at SR. Systems credited in DSA's (spell out) were sampled and found to be consistent with the SR list of qualification cards.

Personnel assigned SSO responsibilities were identified in draft DOE-SR Assignment Memorandum. The formal memo from the Manager, SR, should be issued promptly.

Interviews were conducted with SSO supervisors to assess their understanding of roles and responsibilities assigned to them in SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0 "Draft DOE SR Technical Training and Qualification Program" procedure (including attachments) and their implementation at SR. Supervisors have established qualification schedules for their SSO personnel and defined a balance between SSO qualification schedules and day-to-day work assignments. Supervisors periodically reassess this balance by monitoring qualification progress and quality of assigned work products. Performance expectations have been documented in their Performance and Development Plans for their SSO staff.

SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0 "Draft DOE SR Technical Training and Qualification Program" procedure (including attachments) requirements and desktop instructions treat SMPs (not sure what SMPs are - spell out) as Critical Technical Capability staff and applies rigorous qualification, selection, staffing, and monitoring criteria to these positions. Although not specifically addressed as a separate program, this approach appears to be adequate to meet standards.

SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0 "Draft DOE SR Technical Training and Qualification Program" procedure (including attachments) does address many specific requirements and standards related to identifying and designating qualifying officials. This also appears to be adequate.

SR line management demonstrated a good understanding of the SSO function.

Oversight Performance (OP)

The CRADS used for this functional area addressed actions taken to oversee the contractor's CSE Program and to ensure SSO personnel are knowledgeable and familiar with assigned safety systems. Interviews were performed to confirm program understanding, ownership and implementation by personnel assigned SSO

responsibilities. In general, SSO personnel at SR are familiar with their roles and responsibilities. Unless assigned full-time to qualifications, SSO personnel conduct oversight activities consistent with the expectations described within the Performance and Development Plan while working to complete their SSO qualification card. SSO staff attend periodic meetings with contractor counterparts and review system issues.

SSO candidates interviewed demonstrated a very good understanding of the actions necessary to implement the SSO function at SR. However, many SSO candidates interviewed demonstrated a low familiarity with the SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0 "Draft DOE SR Technical Training and Qualification Program" procedure (including attachments) content (e.g., SR specific activities described in Section 5.13). Although supervisors had discussed the SSO initiative with their staff and incorporated general expectations in staff Performance and Development Plans (P&DPs), none explicitly required their SSO candidates to read and demonstrate a working understanding of the draft procedure.

The review of this CRAD functional area also focused on challenges encountered during the development and implementation of the SSO program at SR. Interviews identified the challenges encountered as SR implements its program:

- Striking the right balance between day-to-day AB work priorities, time allowed for qualifications, and quality/depth of work products. Although most SSO candidates understood the program's potential value, priority assigned to day-to-day work may adversely impact on actual SSO in some cases.
- Management attention and follow through regarding SSO qualification and oversight activities is essential to the successful implementation of this program. Active involvement by line managers is a key element in ensuring SSO personnel understand expectations and provide feedback where process improvements may be necessary, and reinforces the importance of this program.
- Improving interaction between FRs, SSO staff, and line management. This includes establishing SSO credibility through an increased level of knowledge; management recognition of improvements when they are implemented; and taking maximum advantage of opportunities where FRs and SSO staff can work together to resolve day-to-day issues at SR.

CONCLUSIONS and RECOMMENDATIONS

The SR process for conducting generic portions of the SSO training program through classroom training and testing was viewed as a strength. With modest alteration these or very similar courses could be used throughout the DOE complex.

The degree of involvement that potential SSO candidates and their supervisors had in tailoring the SSO program and the Qualification Plan has resulted in significant knowledge of and support for the program. This is also viewed as a strength.

No significant weaknesses were found.

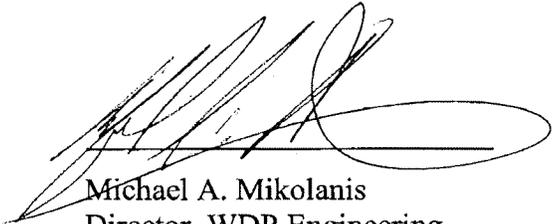
SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0 "Draft DOE SR Technical Training and Qualification Program" procedure (including attachments) describes a process to implement the SSO function which meets or exceeds the requirements of DOE M 426.1-1A. Line managers and SSO personnel understand the program's objectives and are actively working to implement the function for safety systems at SR. No significant deficiencies were identified during this review. Opportunities for improvement include:

- SRM 300.1.1B, Chapter 6, Section 6.1, Rev 0 "Draft DOE SR Technical Training and Qualification Program" procedure (including attachments) should be revised to address minor discrepancies:
 - Specifically address Safety Management Programs responsibilities and any qualifications required for persons holding such responsibilities.
- Training should be provided regarding the duties, responsibilities and functions of the SSO program at SR. Interviews indicate that SSO staff and FRs would benefit from such training. Consideration should be given to including this as a knowledge, skill and ability in a future revision to SSO qualification cards. (Note: this has already been addressed at SR. See previous notes.)
- Promptly revise, if required, and issue draft documents as formal final documents.

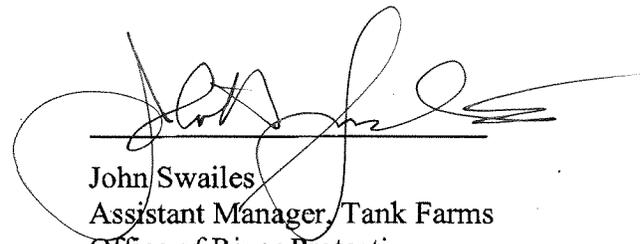
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ATTACHMENT: Safety System Oversight (SSO) Program Implementation Assessment
Criteria Review and Approach Documents (CRADs)



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