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Initial Implementation Assessment of the Office of River Protection Safety System Oversight Program

Final Report

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Assessment Team

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EXECUTIVE SUMMARY

Initial implementation of the Safety System Oversight (SSO) function being established at the Office of River Protection (ORP) was reviewed by two Senior Technical Safety Managers to assess efforts to implement the program. The ORP SSO Program Plan 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 objective and are actively working to implement the function for safety systems at ORP. Within 6-9 months ORP intends to begin implementing the SSO function for safety management programs credited by safety basis documents. No significant deficiencies were identified during this review. Opportunities for improvement include:

- Program Plan should be revised to address minor discrepancies:
 - The Program Plan does not address changes needed to adapt the SSO function to accommodate the “design and build” stage of WTP. For example, the WTP contractor does not have a cognizant system engineer program and it will be difficult for the WTP SSOs to perform walk downs on systems which have not yet been constructed in the facility.
 - Some safety management programs credited with safety related functions in the tank farm DSA were not addressed in the Program Plan (e.g., hoist and rigging program for critical lifts). Although SSO coverage may not be necessary for all safety management programs, it was not apparent whether gaps were the result of a deliberate decision or an omission during program development.
 - The Program Plan should be updated to reflect that is now a Project Manager vice an Assistant Manager.
- Planned use of SSO stop work authority is unclear. Although the Program Plan assigns “stop work” authority to SSO personnel, interviews indicate line management has not yet determined whether that responsibility will actually be assigned. If such authority is assigned to them, contract documents should be reviewed to determine whether a modification is necessary to reflect the change.
- No plans are in place to address issues related to qualification requirements for matrix support personnel and how the ORP SSO qualification process (i.e., Program Plan requirements and desktop instructions) will be applied to them.
- Training should be provided regarding duties, responsibilities and functions of the SO program at ORP. Interviews indicate that SSOs and Facility Representatives 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.
- The FRAM should be revised to include duties and responsibilities documented in the Program Plan. Evaluate whether SSO responsibilities should be assigned to the Tank Farm Deputy Assistant Manager.

- Minor discrepancies were noted in training records maintained for SSO personnel and their supervisors.

Several areas for continued management attention were identified:

- Adapting the SSO function to design and construction work scope encountered at WTP. The Program Plan is being adapted to for implementation where safety systems/programs have not yet been installed, and in some cases still being designed. Line management has not yet worked through all the changes necessary to adapt the ORP program for use at WTP facilities. For example, the WTP contractor does not have a cognizant system engineer program and it will be difficult for the WTP SSOs to perform walk downs on systems which have not yet been constructed in the facility.
- 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; provide feedback where process improvements may be necessary; and reinforces the importance placed upon this program.
- Improving interaction between Facility Representatives, SSOs, and line management. This includes establishing SSO credibility through increased level of knowledge; management recognition of improvements when they are complete; and taking maximum advantage of opportunities where Facility Representatives and SSOs can work together to resolve day-to-day issues at ORP.
- Coverage and staffing needs for the Waste Treatment Facilities is expected to vary during design and construction and future resource loading necessary to maintain adequate WTP SSO staffing has not been completed by line management.

Use of Facility Representatives to mentor SSO candidates during initial qualification was viewed as a good practice. This practice takes advantage of systems expertise already resident in Facility Representatives while developing the new SSO resources.

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 effectiveness of the Contractor's cognizant system engineer program. The SSO function, including roles and responsibilities of personnel assigned this function, 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 Office of River Protection (ORP) 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 ORP Assistant Manager for Tank Farms and a qualified Senior Technical Safety Manager from the Savannah River Site. 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 ORP. Full implementation at ORP will be assessed by the FTCP before the end of FY05. 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 ORP 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 assessment consisted of document review and management interviews assessing ORP action to implement the SSO functions described in DOE M 426.1-1A. Since the SSO program has not yet been fully implemented, the OP functional area consisted of SSO personnel interviews to confirm understanding of Program Plan requirements and assess actions being taken to provide this oversight.

Documents reviewed:

- ORP Memorandum from R.J. Schepens to Distribution, The U.S. Department of Energy, Office of River Protection (ORP) Safety Oversight (SO) Updated Program Plan, 04-TED-026, dated April 24, 2004. (including attachments)
- The U.S. Department of Energy, Safety System Oversight (SSO) Program Desktop Instruction, Safety System Oversight Qualification Process, SSO-DI-001 R1.
- The U.S. Department of Energy, Safety System Oversight (SSO) Program Desktop Instruction, Qualification Evaluation Methods, SSO-DI-002 R1.

- The U.S. Department of Energy, Office of River Protection (ORP) Office of Assistant Manager for Tank Farms, Safety System Oversight Qualification Standard for Hose-in-Hose Transfer (HIHT) Systems, Revision 1.
- The U.S. Department of Energy, Office of River Protection (ORP) Office of Assistant Manager for Waste Treatment Plant, Safety System Oversight Qualification Standard for Ventilation Systems, Revision 1.
- Training records for personnel interviewed
- ORP SSO program self assessment

Personnel interviewed include:

- Manager, ORP
- WTP Project Manager
- Assistant Manager Tank Farms Project
- Director, TED
- Director, WED
- Director, TPD
- WTP SO Candidates (2)
- Tank Farm SO Candidates (3)
- Tank Farm Facility Representatives (3)
- WTP Facility Representative (2)

RESULTS

Program (PGM)

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

The SSO function established at ORP is defined by the Office of River Protection Safety Oversight Program Plan, Revision 1 (Program Plan). The Program Plan was issued by memorandum from the Manager, ORP on April 24, 2004. The Program Plan represents ORP management's intent to develop and implement a program to implement the SSO function that is as rigorous as the program used to define and implement the Facility Representative function. Section 1.2 of the Program Plan 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 SSO program and systems/programs assessed in the tank farm Documented Safety Analysis. Roles, responsibilities and authorities of personnel assigned SSO responsibilities are described in sections 2.5 and 2.6 of the Program Plan. Roles, responsibilities and functions described in the Program Plan are consistent with, and duplicate, the content of DOE M 426.1-1A.

Personnel assigned SSO responsibilities were identified in attachment 1 of the Manager's memorandum issuing the Program Plan and updated in subsequent memos dated May 18, and July 19, 2004.

SSO-DI-001 and SSO-DI-002 describe ORP processes to qualify SSO candidates and evaluate their level of knowledge. The process requires candidates to complete a separate qualification card developed for each assigned safety system or safety management program. Level of knowledge regarding qualification card competencies is confirmed through interviews with a qualifying official. Overall readiness is determined through satisfactory completion of a walkthrough with a Facility Representative, a final written exam, a final oral review board, and an interview with the ORP Manager. This process meets or exceeds the expectations of DOE M 426.1-1A.

Although not explicitly required by DOE M 426.1-1A, the Program Plan requires ORP personnel with safety management program (SMP) TQP qualifications (e.g., Fire Protection or Criticality Safety) to qualify on a new SMP qualification card related to that safety management program. Interviews with the program sponsor indicate that decision was based upon significant site-specific practices implemented by the contractor for these safety management programs. SMP qualification cards/standards have not yet been developed.

Qualification records were reviewed for SSO personnel interviewed. Some minor qualification record discrepancies were observed:

- HRM qualification records lacked documentation regarding STSM qualification for the WTP Project Manager; Assistant Manager Tank Farms Project; and the Director, WED. However, when contacted incumbents in these positions were able to provide STSM qualification documents.
- The Director, TED, STSM qualification card lacked final approval signatures.
- HRM review and signature certifying adequacy of TQR documentation was lacking on several qualification cards for SSO personnel.

Interviews were conducted to assess understanding of the SSO role. Manager expectations were generally consistent with the ORP Program Plan. Line management expected personnel assigned SSO responsibilities to have level of knowledge equivalent to Contractor cognizant system engineer for assigned systems/programs but the depth of their oversight reviews (i.e., the frequency they review assigned safety systems) are not expected to be equivalent to that of the Contractor cognizant system engineer. This meets or exceeds DOE M 426.1-1A expectations.

Staffing actions were discussed with supervisors to determine how current and future SSO staffing needs were being met and maintained. Coverage and staffing necessary to implement the SSO function at ORP is documented in the Program Plan. These actions were primarily based upon line management judgment following a review of systems and programs credited in safety basis documents. Coverage and staffing needs for the Waste Treatment Facilities is expected to vary during design and construction and future resource loading necessary to maintain adequate WTP SSO staffing has not been completed by line management.

Interviews also indicated that, in order to implement the Program Plan at WTP, the SSO function described in DOE M 426.1-1A had to be adapted to reflect the unique circumstances related to design and construction activity. For example the WTP contractor does not have cognizant system engineers and relies instead upon design engineers to perform an analogous function. However, these interviews also indicate the Program Plan has not been revised to reflect changes necessary to accommodate the “design and build” stage of WTP. For example, the WTP contractor does not have a cognizant system engineer program and it will be difficult for the WTP SSOs to perform walk downs on systems which have not yet been constructed in the facility.

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 are appropriately trained and qualified. Section 2.0 of the Program Plan identifies which supervisors with responsibilities for SSO personnel need to maintain STSM qualifications. The Program Plan identifies responsibilities for the Assistant Manager for the Waste Treatment and Immobilization Plant Project – a position that no longer exists at ORP. The Program Plan should be updated to reflect that is now the Project Manager vice an Assistant Manager. Only personnel assigned to these supervisors are assigned SSO responsibilities. No SSO responsibilities were identified for the Tank Farms Project Deputy Assistant Manager.

Qualification records were reviewed for supervisors with responsibilities for SSO personnel. All SSO candidates are assigned TQP functional areas in addition to the SSO qualification card. All but one Tank Farms SSO had previously completed the functional areas; that SSO is assigned a functional area and is making progress to complete it. ORP WTP SSO personnel completed the waste management functional area during initial TQP implementation and were assigned new functional areas to complete. WTP SSO personnel are making progress completing those new qualifications in addition to the SSO card.

SSO qualification at ORP is self-study and left to the initiative for each candidate to complete. Tank farms Facility Representatives are assigned as mentors for the tank farms SSO candidates. ORP supervisors have established qualification dates and established a system for tracking qualification progress.

Interviews were conducted with supervisors to how the need to perform current SSO reviews is balanced against the need to allow candidates sufficient time to complete their self-study activities.

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-related systems at ORP. Systems and programs credited in the

tank farm DSA were reviewed and found to be consistent with the ORP list of qualification cards. However, safety management programs identified in the Program Plan were not consistent with those credited with a safety-related function in the tank farm DSA (e.g., hoist and rigging program for critical lifts). Qualification cards for WTP systems/programs was based on a combination of the PSAR and management judgment as their functional classification (e.g., safety-class/safety-significant) has not yet been finalized. Systems and safety management programs credited in the PSAR are consistent with those defined in the Program Plan.

Personnel assigned SSO responsibilities were identified in attachment 1 of the Manager's memorandum issuing the Program Plan.

The Program Plan, Section 2.5 and 2.6, describes a responsibility for SSOs to stop work consistent with that described for Facility Representatives (reference DOE STD 1063). Although interviews indicate some line managers view this responsibility to be the same as that assigned to Facility Representatives, other ORP managers indicated this responsibility was limited to the "imminent hazard" responsibility assigned to non-Facility Representatives. No modifications have yet been made to explicitly address this responsibility in contracts with the two prime Contractors at ORP.

Interviews were conducted with supervisors to assess understanding of roles and responsibilities assigned to them in the Program Plan and their implementation at ORP. Supervisors have established qualification schedules for their SSO personnel and defined a balance SSO qualification schedules between 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 Individual Development Plans (IDPs)/Individual Performance Plans (IPPs) for their SSO staff.

Although ORP resources are exclusively used to provide SSO functions for facility safety systems, matrix support from RL and the Savannah River Site are relied upon to provide SSO coverage for some safety management programs (i.e., nuclear safety and WTP fire protection). No plans are in place to address issues related to qualification requirements for matrix support personnel and how the ORP SSO qualification process (i.e., Program Plan requirements and desktop instructions) will be applied to them. For example, the Program Plan does not address issues related to identifying qualifying officials and whether exemptions will be necessary for qualification walkthroughs/tests/boards for offsite personnel.

ORP line management demonstrated an adequate understanding of the SSO function.

Oversight Performance (OP)

The CRADS used for this functional area addressed actions taken to oversee the Contractor's cognizant system engineer 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 ORP are familiar with their roles and responsibilities. Unless assigned full-time to qualifications, SSO personnel conduct oversight activities consistent with expectations described within the Program Plan while working to complete their SSO qualification card. SSOs attend periodic meetings with Contractor counterparts and review system issues.

In general, SSO candidates interviewed demonstrated a practical understanding of the actions necessary to implement the SSO function at ORP. However, many SSO candidates interviewed demonstrated a low familiarity with the Program Plan content (e.g., ORP specific activities described in Section 3.2). Although supervisors had discussed the SSO initiative with their staff and incorporated general expectations in staff IDPs/PPs, none explicitly required their SSO candidates to read and demonstrate a working understanding of the ORP Program Plan.

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

- The Program Plan has to be adapted to for implementation where safety systems/programs have not yet been installed, and in some cases still being designed. Line management has not yet worked through all the changes necessary to adapt the ORP program for use at WTP facilities. For example, the WTP contractor does not have a cognizant system engineer program and it will be difficult for the WTP SSOs to perform walk downs on systems which have not yet been constructed in the facility.
- 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; provide feedback where process improvements may be necessary; and reinforces the importance placed upon this program.
- Improving interaction between Facility Representatives, SSOs, and line management. This includes establishing SSO credibility through increased level of knowledge; management recognition of improvements when they are complete; and taking maximum advantage of opportunities where Facility Representatives and SSOs can work together to resolve day-to-day issues at ORP.

CONCLUSIONS and RECOMMENDATIONS

The SSO Program Plan 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 objective and are actively working to implement the function for safety systems at ORP. Within 6-9 months ORP intends to begin implementing the SSO function for safety management programs credited by safety basis documents. No significant deficiencies were identified during this review. Opportunities for improvement include:

- Program Plan should be revised to address minor discrepancies:
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 - The Program Plan should be updated to reflect that is now a Project Manager vice an Assistant Manager.
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Use of Facility Representatives to mentor SSO candidates during initial qualification was viewed as a good practice. This practice takes advantage of systems expertise already resident in Facility Representatives while developing the new SSO resources.

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

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Attachment A

**Criteria and Review Approach Documents
(CRADs)**

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

Revision 0

PROGRAM (PGM)

OBJECTIVE

PGM.1 An effective SSO Program is established by the Field Element Manager to apply engineering expertise to maintain safety system configuration and to assess system condition and effectiveness of safety management program implementation.

Criteria

- PGM.1.1 The SSO Qualification Program is part of the Technical Qualification Program (DOE M 426.1-1A, Chapter III, Section 1, 2.b (1)).
- PGM.1.2 The SSO Program establishes appropriate training, qualification, and performance requirements for SSO personnel and the supervisors are held accountable for achieving them (DOE M 426.1-1A, Chapter III, Section 1, 2.b (2)).
- PGM.1.3 The safety systems and safety management programs included in the SSO Program align with those systems and programs identified in the applicable Documented Safety Analysis (DOE M 426.1-1A, Chapter III, Section 1, 4.c).
- PGM.1.4 Safety system oversight requirements are defined and implemented, for example, functions, responsibilities, and authorities of personnel assigned to perform safety system oversight and their interface/support of Facility Representatives are clearly defined, and SSO staffing needs are identified and there is a plan or process to ensure future staffing needs are met and maintained (DOE M 426.1-1A, Chapter III, Section 1, 2.b (3) & (4)).
- PGM.1.5 Affected DOE and contractor managers understand the SSO role and relationship to Facility Representatives and the contractor's cognizant System Engineers, and provide the necessary access and support (DOE M 426.1-1A, Chapter III, Section 1, 3.d).
- PGM.1.6 Qualifying Officials are assigned to sign site-specific Qualification Cards (DOE M 426.1-1A, Chapter III, Section 1, 2.b (6)).
- PGM.1.7 The SSO Program contains features to verify that SSO candidates possess the required level of knowledge and/or skills to perform assessments and investigations to confirm performance of safety systems in meeting

established safety and mission requirements (DOE M 426.1-1A, Chapter III, Section 1, 2.b (5)).

Approach

Record Review: Review documentation (e.g., site technical qualification program documents, SSO Program Plan, SSO Program procedures, qualification cards and/or standards, internal memorandums, Documented Safety Analyses, etc.) which establish the SSO Program and describe its implementation to determine that the program is complete and comprehensive.

Interviews: Interview management personnel with responsibilities for implementing and executing the SSO program to determine if they are familiar with the role of SSO personnel relative to the Facility Representatives and the contractor's cognizant system engineers, if they provide adequate resources for training, qualification, future staffing, and performance of SSO personnel, and if they appropriately qualified to perform their assigned role in the SSO program. Interview qualifying officials to determine if they are familiar with their role and responsibility, they are currently qualified, and they are performing their assigned role.

Field Observation: Evaluate any process used by or directed by the Field Element Manager to determine the effectiveness of SSO Program Performance.

TRAINING AND QUALIFICATION (TQ)

OBJECTIVE

TQ.1 SSO personnel and supervisors with responsibilities for SSO personnel are appropriately trained and qualified, or are in the process of achieving qualification.

Criteria

- TQ.1.1 Supervisors with responsibilities for SSO personnel maintain Senior Technical Safety Manager (STSM) qualification (DOE M 426.1-1A, Chapter III, Section 1, 2.c (1)).
- TQ.1.2 Site-specific qualification standards and cards have been developed and a documented process is implemented to assure that SSO candidates meet, at a minimum, the SSO knowledge, skills, and abilities specified in the *Federal Technical Capability Manual* DDOE 426.1-1A, Chapter III, Section 1, 5.a & 5.b)
- TQ.1.3 All SSO personnel have completed or are completing the General Technical Base Qualification Standard (DOE-STD-1146-2001) and one or more Functional Area Qualification Standard(s) in a technical area linked to their individual job descriptions (DOE M 426.1-1A, Chapter III, Section 1, 4.a).
- TQ.1.4 All SSO personnel have completed or are completing the site-specific qualification standard associated with assigned safety systems (DOE M 426.1-1A, Chapter III, Section 1, 4.a).
- TQ.1.5 SSO Supervisors have established methods to assign initial qualification dates, track progress toward qualification, and ensure retraining/requalification occurs as required for each SSO candidate in the qualification process (DOE M 426.1-1A, Chapter III, Section 1, 2.c (4) through (6)).

Approach

Record Review: Review qualification records to establish that supervisors and managers of SSO are qualified as an STSM and that SSO personnel are trained and qualified. Review qualification and requalification schedules, staffing plans, training plans, travel funding, etc. to determine that sufficient resources are provided for training, retraining, qualifying, and requalifying SSO personnel.

Interviews: Interview supervisors, training coordinators, SSO personnel, and budget personnel to establish that training and qualification plans and schedules are being executed as planned and that sufficient resources are provided to meet the schedules.

Field Observation: Observe activities associated with the qualification process, such as qualification boards, exams, walk throughs to determine that the training and qualification process is implemented and functioning effectively.

MANAGEMENT (MG)

OBJECTIVE

MG.1 SSO Supervisors effectively perform their SSO program responsibilities.

Criteria

- MG.1.1 Site-specific SSO qualification standards and cards are developed (DOE M 426.1-1A, Chapter III, Section 1, 2.c (2)).
- MG.1.2 Supervisors have identified and approved SSO candidate selection (DOE M 426.1-1A, Chapter III, Section 1, 2.c (3)).
- MG.1.3 Supervisors of SSO personnel have established SSO personnel qualification schedules and are tracking progress (DOE M 426.1-1A, Chapter III, Section 1, 2.c (4)).
- MG.1.4 Supervisors facilitate SSO qualification (e.g., ensure sufficient time and training are provided to complete qualification tasks) (DOE M 426.1-1A, Chapter III, Section 1, 2.c (5)).
- MG.1.5 Supervisors ensure SSO personnel are trained and qualified to perform assigned duties (DOE M 426.1-1A, Chapter III, Section 1, 2.c (6)).
- MG.1.6 SSO responsibilities are included and measured in Individual Performance Plans (DOE M 426.1-1A, Chapter III, Section 1, 2.c (7)).
- MG.1.7 Ensure SSO qualifications are maintained current by training and assignments planned in Individual Development Plans (DOE M 426.1-1A, Chapter III, Section 1, 2.c (8)).
- MG.1.8 SSO Supervisors periodically evaluate program effectiveness and implement corrective actions in a timely manner (DOE M 426.1-1A, Chapter III, Section 1, 2.c (9)).

Approach

Record Review: Review qualification cards, Individual Performance Plans, and other SSO program documents and procedures to establish that managers and supervisors are effectively performing their responsibilities as defined in the SSO program. Review other documentation used by supervisors to establish SSO program effectiveness and implementation of corrective actions.

Interviews: Interview supervisors and managers to establish that they are familiar with their assigned roles, they perform their assigned duties, monitor the effectiveness of the SSO program and ensure any identified corrective actions are implemented.

Field Observation: Observe any activities associated with SSO program effectiveness evaluations and/or corrective action implementation.

OVERSIGHT PERFORMANCE (OP)

OBJECTIVE

OP.1 Collectively, SSO personnel provide oversight of the Contractors' System Engineer Program.

Criteria

- OP.1.1 Oversight performed by SSO personnel establishes that the contractor System Engineer Program is effectively implemented with goals, objectives, and performance measures (DOE M 426.1-1A, Chapter III, Section 1, 2.a (1)).
- OP.1.2 SSO personnel maintain communication with the contractor's cognizant System Engineer (DOE M 426.1-1A, Chapter III, Section 1, 2.a (1)).
- OP.1.3 SSO personnel monitor performance of the contractor's cognizant System Engineer Program (DOE M 426.1-1A, Chapter III, Section 1, 2.a (1)).
- OP.1.4 SSO personnel attend selected contractor meetings with Facility Representatives and contractor personnel responsible for system performance (e.g., cognizant System Engineers, design authorities, and program managers) (DOE M 426.1-1A, Chapter III, Section 1, 2.a (3)).

Approach

Record Review: Review oversight documentation, such as SSO assessment reports, SSO walk throughs, correspondence, SSO activity records or logs, corrective action documents, etc. to establish that SSO personnel are overseeing implementation and execution of the contractor system engineer program. Review the contractor's system engineer program to determine whether there are any program weaknesses or deficiencies that have not been identified by SSO personnel.

Interviews: Interview SSO personnel, Facility Representatives, and contractor system engineers to establish the level of interface between SSO personnel and the contractor's cognizant system engineers.

Field Observation: Observe any oversight activities of the contractor's system engineer program performed by SSO personnel.

OBJECTIVE

OP.2 SSO personnel are knowledgeable and familiar with assigned safety systems and/or programs.

Criteria

- OP.2.1 A qualified SSO is, in fact, knowledgeable of the system status, performance, maintenance, operations, design, and vulnerabilities of their assigned systems or programs. This is evidenced by:
 - OP.2.1.1 SSO personnel regularly and routinely review periodic system health/status reports (DOE M 426.1-1A, Chapter III, Section 1, 2.a (2)).
 - OP.2.1.2 SSO personnel review test results, investigation reports, root cause analyses, etc (DOE M 426.1-1A, Chapter III, Section 1, 2.a (2)).
 - OP.2.1.3 SSO personnel interface with external organizations that can provide insights on performance (DOE M 426.1-1A, Chapter III, Section 1, 2.a (2)).
 - OP.2.1.4 SSO personnel perform assessments, periodic evaluations of equipment configuration and material condition and safety management program implementation (DOE M 426.1-1A, Chapter III, Section 1, 2.a (3)).
 - OP.2.1.5 SSO personnel evaluate the effects of aging on system equipment and components, the adequacy of work control and change control processes, and consider the appropriateness of system maintenance and surveillance activities with respect to reliable performance of safety function(s) (DOE M 426.1-1A, Chapter III, Section 1, 2.a (3)).
 - OP.2.1.6 SSO personnel identify technical issues and participate actively in the resolution of the issues.
- OP.2.2 Safety systems and safety management programs have established goals, objectives, and performance measures
- OP.2.3 SSO personnel perform evaluations of contractor troubleshooting, investigations, root cause evaluations, and selection and implementation of corrective actions, in conjunction with Facility Representatives (DOE M 426.1-1A, Chapter III, Section 1, 2.a (4)).
- OP.2.4 SSO personnel provide support to other Federal employees, as appropriate. (DOE M 426.1-1A, Chapter III, Section 1, 2.a (5))
- OP.2.5 SSO personnel assess contractor compliance with relevant DOE regulations, industry standards, contract requirements, safety basis requirements, and other system requirements (DOE M 426.1-1A, Chapter III, Section 1, 2.a (6)).

- OP.2.6 SSO personnel confirm configuration documentation, procedures, and other sources of controlling information are current and accurate (DOE M 426.1-1A, Chapter III, Section 1, 2.a (7)).
- OP.2.7 SSO personnel report potential or emergent hazards immediately to DOE line management and Facility Representatives (DOE M 426.1-1A, Chapter III, Section 1, 2.a (8)).
- OP.2.8 SSO personnel stop tasks, if required, to prevent imminent impact to the health and safety of workers and the public, to protect the environment, or to protect the facility and equipment and immediately notify the on-duty or on-call Facility Representative (DOE M 426.1-1A, Chapter III, Section 1, 2.a (8)).
- OP.2.9 SSO personnel serve, when assigned, as qualifying officials in the development or revision of Functional Area Qualification Standards, mentor assigned backups, and qualify other candidates to the Functional Area Qualifications Standards needed to achieve Safety System oversight qualification (DOE M 426.1-1A, Chapter III, Section 1, 2.a (9)).
- OP.2.10 SSO personnel maintain cognizance of the appropriate funding and resources to maintain and improve safety systems (DOE M 426.1-1A, Chapter III, Section 1, 2.a (10)).
- OP.2.11 Methods have been established for SSO personnel to routinely communicate system/program performance information and issues with STSMs and the Field Office Manager (DOE M 426.1-1A, Chapter III, Section 1, 2.a (1)).

Approach

Record Review: Review oversight documentation, such as SSO assessment reports, SSO walk throughs, correspondence, SSO activity records or logs, corrective action documents, etc. to establish that SSO personnel are performing required oversight. Review contract requirements and their flow down through the contract to the safety systems and safety management programs to establish the effectiveness of SSO personnel oversight that the contractor complies with all requirements relative to safety systems and programs. Review a sample of the safety system health reports, safety system test reports, safety system investigation reports, safety system root cause analyses, etc. to determine the effectiveness of SSO personnel knowledge and familiarity with this information.

Interviews: Interview SSO personnel to determine their knowledge of and familiarity with assigned safety systems and safety management programs, and the reports that the contractor may generate in relation to the systems and programs.

Field Observation: Observe SSO personnel walk downs and other activities in the field to establish the level of SSO personnel knowledge and familiarity of safety systems.