

**Independent Oversight Targeted Review of the
Sandia National Laboratories
Federal Assurance Capability**



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**Office of Safety and Emergency Management Evaluations
Office of Enforcement and Oversight
Office of Health, Safety and Security
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Acronyms

ACRRF	Annular Core Research Reactor Facility
CAP	Corrective Action Plan
CAS	Contractor Assurance System
CRAD	Criteria, Review and Approach Document
CONOPS	Conduct of Operations
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
ES&H	Environment, Safety, and Health
FR	Facility Representative
FY	Fiscal Year
FTE	Full-Time Equivalent
HSS	Office of Health, Safety and Security
NNSA	National Nuclear Security Administration
OAA	Operational Awareness Activity
OFI	Opportunity for Improvement
PEP	Performance Evaluation Plan
PER	Performance Evaluation Report
SFO	Sandia Field Office
SME	Subject Matter Expert
SNL	Sandia National Laboratories
TA-V	Technical Area V

Independent Oversight Targeted Review of the Sandia National Laboratories Federal Assurance Capability

1.0 PURPOSE

The U.S. Department of Energy (DOE) Office of Enforcement and Oversight (Independent Oversight), within the Office of Health, Safety and Security (HSS), conducted an independent review of the performance of the DOE Sandia Field Office (SFO) safety oversight of the Sandia Corporation (hereinafter referred to as Sandia or the contractor), the management and operations contractor at the Sandia National Laboratories (SNL). This review is intended to provide input for an HSS evaluation of the effectiveness of the complex-wide Federal assurance capability for defense nuclear facilities. This is an assigned task for HSS in accordance with Commitment #16 of the DOE Implementation Plan to Improve Oversight of Nuclear Operations, which DOE developed in response to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*. The Independent Oversight review was performed on site January 20-23, 2014.

2.0 SCOPE

The objective of this review was to evaluate the adequacy and effectiveness of the SFO safety oversight program in ensuring safe operations and maintenance of nuclear facilities by the SNL contractor. The review team used selected elements of HSS Criteria, Review and Approach Document (CRAD) 45-21, Revision 1, *Feedback and Continuous Improvement Inspection Criteria and Approach – DOE Field Element*, to collect and analyze data on SFO oversight activities for evaluation of the effectiveness of Federal assurance capability. Specific CRAD elements that were used included:

- DOE Field Element Line Management Oversight Inspection Criteria 1-6.
- DOE Field Element Facility Representative Program Inspection Criteria.

3.0 BACKGROUND

The DOE Independent Oversight program is implemented by HSS's Office of Enforcement and Oversight, an independent office within DOE that has no line management or policy-making responsibilities or authorities. The Independent Oversight program is designed to enhance DOE safety and security programs by providing DOE and contractor managers, Congress, and other stakeholders with an independent evaluation of the adequacy of DOE policy and requirements, and the effectiveness of DOE and contractor line management performance in safety and security and other critical functions as directed by the Secretary of Energy. The Independent Oversight program is described in and governed by DOE Order 227.1B, *Independent Oversight Program*, and a comprehensive set of internal protocols, operating practices, inspectors' guides, and process guides. The program is implemented by two subordinate offices: the Office of Security and Cyber Evaluations and the Office of Safety and Emergency Management Evaluations.

The Office of Safety and Emergency Management Evaluations evaluates safety policies and programs throughout DOE, with a particular emphasis on evaluating worker and public protection from the nuclear hazards that exist at many DOE sites. This office accomplishes its mission through two primary mechanisms: (1) a network of staff site leads who are assigned to monitor the activities at DOE sites with nuclear facilities or activities, and coordinate office appraisal activities at those sites; and (2) a program of

targeted reviews that evaluate selected functional or topical areas at multiple sites across the DOE complex. Appraisal activities are selected, prioritized, and planned based on factors such as risk to workers and the public, facility operational status, and performance history.

The performance of DOE oversight was identified as an Independent Oversight targeted review area in an HSS memorandum from the Chief Health, Safety and Security Officer to DOE senior line management dated November 6, 2012. The memo also stated that the reviews would provide an input to the overall evaluation of DOE Federal assurance capability. The HSS plan, *Plan for the Independent Oversight Targeted Review of Federal Assurance Capability at Sandia National Laboratories*, January 2014, defined the specific focus for this targeted review area.

4.0 METHODOLOGY

The review team used selected elements of the CRAD and/or lines of inquiry, as identified in Section 2.0, to facilitate data collection. Offsite planning included discussions with responsible site personnel; determination of the documents, facilities, and activities to be reviewed; schedule of the assessment; and collection and review of applicable site procedures and documents. The onsite data gathering portion of the assessment consisted of interviews and review of supporting documents. Activities of DOE field office personnel, including facility representatives (FRs) and subject matter experts (SMEs), were observed whenever possible. Appendix B documents the key documents reviewed, interviews, and observations.

5.0 RESULTS

Independent Oversight determined that SFO's oversight program as defined and implemented met the inspection criteria used for this review. The team identified six opportunities for improvement (OFIs).

5.1 Oversight Programs and Processes

Review/Inspection Criteria:

The DOE Field Element evaluates contractor and DOE programs and management systems, including site assurance systems, for effectiveness of performance (including compliance with requirements). Such evaluations must be based on the results of operational awareness activities; assessments of facilities, operations, and programs; and assessments of the contractor's assurance system. The level and/or mix (i.e., rigor or frequency in a particular area) of oversight may be tailored based on considerations of hazards, and the maturity and operational performance of the contractor's programs and management systems. (DOE Order 226.1B, 4b(1)) CRAD 45-21, Inspection Criteria 1.

Review/Inspection Criteria:

The DOE Field Element oversight processes are tailored according to the effectiveness of contractor assurance systems, the hazards at the site/activity, and the degree of risk, giving additional emphasis to potentially high consequence activities. (DOE Order 226.1B, 4b(5)) CRAD 45-21, Inspection Criteria 4.

SFO has established and implemented a suite of policy, process, procedure, and guidance documents for oversight of the Sandia's management and operations at SNL. These documents describe the approach, requirements, and process steps for planning and conducting transactional and systems oversight of the contractor, as well as a process for ongoing, structured evaluation of performance to contractual requirements. A January 2010 SFO and SNL document titled "Governance and Oversight Project Execution Plan" describes a joint description of the site's implementation of the National Nuclear

Security Administration's (NNSA's) reform of its contractor oversight processes. NNSA's approach to contractor oversight was subsequently more formally defined in NNSA Policy (NAP)-21, *Transformational Governance and Oversight*. SFO has established a process description document that describes how oversight is planned, managed, and improved, and, as described in the following sections, SFO has developed implementing procedures and guidance for accomplishing their contractor oversight program.

SFO has developed and periodically updates a formal Operations Plan, used as a guidance document that defines SFO's strategic and tactical leadership initiatives and oversight objectives. SFO's oversight policy document (SBMS 0804) describes two types of risk-based oversight. For low and moderate risk facilities and activities, oversight relies heavily on the contractor assurance system (CAS) and operational awareness activities (OAAs) by SFO FRs and SMEs. For oversight of high risk and nuclear facilities and activities, SFO relies on traditional formal assessments and operational awareness, referred to as "compliance based oversight" in SFO policies, procedures, and guidance. SFO has established adequate, formal procedures for developing and maintaining annual oversight plans and schedules. In addition, SFO has developed functional area operating procedures that define oversight activities and processes for areas such as safety basis, conduct of operations (CONOPS), fire protection, and criticality safety.

Although the current governing documents for SFO oversight outline the elements of the program and provide general direction for implementation, they contain a number of technical errors and lack sufficient detail in process/procedure steps and guidance (see **OFI-SFO-1**):

- A guidance document describes processes and expectations for managing performance concerns that are not included in the annual performance report (see detailed description in the following section on contractor performance evaluation) and are not referenced in or linked to SFO procedures for issues management.
- Some inputs and outputs are missing from flow charts in several procedures, and the use or applicability of others is unclear.
- The process for the development and use of SFO oversight metrics ("the Dashboard") are insufficiently detailed.
- The purpose of the *SSO Oversight Procedure Exceptions* procedure is unclear.
- The responsibilities and process steps for the collection, evaluation, and analysis of performance data in the *Reporting Contractor Performance* procedure lacks sufficient detail.
- SFO issues management procedures lack sufficient detail (see details in the following section on management of safety issues).

As discussed in Section 5.4, SFO management and staff are aware of weaknesses in the current processes for overseeing, evaluating, and communicating contractor performance, and a formal review of the oversight program is underway.

5.2 Assessments and Operational Awareness Activities

Review/Inspection Criteria:

The DOE Field Element includes written plans and schedules for planned assessments, focus areas for operational oversight, and reviews of the contractor's self-assessment of processes and systems. (DOE Order 226.1B, 4b(2)) CRAD 45-21, Inspection Criteria 2.

Independent Oversight reviewed recent oversight plans and schedules, and a sample of over 20 recently completed assessments of the contractor, five self-assessments, and approximately 10 FR OAA reports.

SFO is conducting transactional and systems-based contractor oversight using formal assessments (independently performed or shadowing of contractor self-assessments), documented OAAs in the field and through document review and approval, and evaluation of the CAS. SFO has developed implementing oversight procedures for conducting compliance-based assessments (including self-assessments) and OAAs, and managing issues resulting from these oversight activities. In general, the plans and oversight reports reviewed by Independent Oversight reflected comprehensive and rigorous oversight activities. The template for compliance-based assessments and OAA reports appropriately contain a designated field and instructions for documenting the results of a review of contractor self-assessments.

However, there were some instances where the evaluation of the adequacy of the CAS has not been consistently or effectively incorporated into assessment activities or reports, and oversight activities are not always adequately addressing/evaluating the CAS information related to the topic under review, especially when SFO has identified contractor process or performance issues (see **OFI-SFO-2**):

- An assessment of the Annular Core Research Reactor Facility (ACRRF) identified a significant deficiency, a minor deficiency, and an observation related to system design description documents. The significant deficiency report in ePegasus appropriately identified the issue as a repeat violation, stating that the previous issue was still unresolved. The report did not adequately describe why, or whether, the contractor's analysis and specified corrective actions were sufficient to prevent recurrence or whether implementing actions were just untimely.
- In some cases, no entries were made in the ePegasus issue report field for "Recurrence Analysis."
- In some cases, no entries were made in the ePegasus assessment report field for "Contractor Self-Assessment," or contractor assessment actions were insufficiently described/rationalized.
- For a minor finding related to required reading in a report of an assessment of the Auxiliary Hot Cell Facility, the report appropriately identified that a similar issue had previously been identified by SFO at the ACRRF, but did not sufficiently "pull the string" or provide details regarding the apparent failure of the contractor to perform an adequate extent-of-condition review and apply appropriate recurrence controls. No finding was written for the deficiency in the contractor's management of this issue.
- This review identified other examples indicating that CAS processes and implementation remain problematic. For example, a July 2013 contractor report of a self-assessment of the flowdown of requirements from the revised DOE Order 210.2A (*DOE Corporate Operating Experience Program*, issued in April 2011), reflected a number of CAS issues. The assessment identified four findings related to failure to implement program requirements. However, one of the findings was not included in the contractor's issues management system until September 18, and the remaining three issues were entered on November 13 (three and a half months after the completion of the assessment). One finding, regarding procedure steps not being performed as required by procedure, was inappropriately closed in December based on the formation of a "partnership" between the environment, safety, and health (ES&H) and Corporate Governance organizations to "explore effective and efficient methods" to comply with the procedure. The remaining three findings remain open, with no actions identified.

While not individually significant, these multiple discrepancies indicate the need for more management attention to evaluation and documentation of the contractor's assurance system. (See further discussion in Section 5.4.)

SFO management and technical staff (i.e., FRs and SMEs) are routinely engaged with the contractor on status, performance, and improvement activities, and communicate SFO/DOE expectations and concerns informally and formally.

5.3 Management of Safety Issues

Review/Inspection Criteria:

The DOE Field Element includes an issues management process that is capable of categorizing findings based on risk and priority, ensuring relevant line management findings are effectively communicated to the contractors, and ensuring that problems are evaluated and corrected on a timely basis. (DOE Order 226.1B, 4b(3)) CRAD 45-21, Inspection Criteria 3.

Independent Oversight reviewed applicable procedures, interviewed SFO staff, and reviewed approximately 60 issue reports (minor and significant findings generated by various SFO organizations with safety responsibilities) from ePegasus generated from January 1, 2012, to May 2013 to determine if issues were being effectively managed by SFO. SFO has developed implementing procedures to detail the management of issues identified by assessments and OAAs of the contractor, and for SFO self-assessments. In general, SFO issues management procedures adequately describe the process steps and requirements for loading issues into ePegasus, reviewing and approving corrective action plans (CAPs), tracking and verifying issue corrective actions for contractor issues and the analysis, developing corrective actions, verifying completion, and conducting effectiveness reviews for self-assessment or externally generated SFO issues.

Notwithstanding the general adequacy of these issues management procedures, some responsibilities and essential elements of effective issues management are not well documented in these procedures (see **OFI-SFO-3**):

- Although the description section of the compliance-based contractor issues management procedure (0804.03.03) states that SFO will verify that minor findings are addressed by the contractor, there are no action steps to accomplish this and no specified criterion for what constitutes “addressing” the issue.” This procedure describes responsibilities to a generic “SSO employee,” but does not identify how the responsible employee is designated. Additionally, this procedure does not provide sufficient criteria or guidance for evaluating the adequacy of the contractor’s CAPs (e.g., adequate causal and extent-of-condition analysis, compensatory measures, actions to address all causes), but refers to using DOE Guide 414.1-1B “when appropriate.” The procedure specifies that the employee is to document the verification of CAP actions in accordance with a form, but does not reference entry into ePegasus or identify what is to be done with the completed form.
- The work instruction for use of ePegasus with regard to SFO oversight procedures (0804.05) does not include an action step for SFO verification of contractor corrective actions for minor findings. This instruction incorrectly states that the only formal method to communicate the issues and results of OAAs is through the quarterly contract performance evaluation reports (PERs).
- The SFO issues management procedure (for SFO owned issues identified by SFO self-assessments or external assessments of SFO) does not address (e.g., provide expectations, criteria, or guidance) important elements such as extent of condition or the methods or required training and qualification for conducting causal analysis. This procedure requires users to consider and prescribe verification activities, but includes no further expectations, criteria, or guidance. This procedure does not provide adequate expectations or administrative controls for determining the need for or ensuring scheduling or completion of effectiveness reviews. This procedure inadequately addresses corrective and preventive action development. For example, the

procedure requires SFO personnel to “develop corrective actions to address causes and/or observations.” The use of the term “observations” in this sentence is unclear as the actions are addressing reported deficiencies and the use of the word “or” is inappropriate because all identified causes should be addressed by preventive actions.

Contractor process and performance issues are being identified, communicated to the contractor, and input into ePegasus. Significant findings require formal CAPs from the contractor. Independent Oversight’s review of issues data from ePegasus indicated that SFO is not effectively monitoring contractor evaluation and resolution of SFO identified issues and/or is not maintaining issue status in ePegasus in a timely manner. Independent Oversight reviewed a sample of 58 issues that had been closed in ePegasus to evaluate SFO’s documentation of the evidence reviewed and the rationale for closure. The review team identified for 45 issues sampled that there was insufficient information in ePegasus to demonstrate they were being effectively monitored and their status updated by SFO staff in a timely manner. The following is a breakdown of the problems or questionable information identified in the 58 issues reviewed by the team:

- 14 contractor significant findings were stauted as “CAP not yet received” ranging from 17 to 24 months after identification with no status update.
- 9 contractor and 3 Federal minor findings were stauted as “Pending Validation” ranging from 11 to 21 months after identification with no status update.
- 3 Federal significant findings, 11 Federal minor findings, 1 contractor significant finding and 1 contractor minor finding were stauted as “Open Validated” (undefined and contradictory terminology).
- A minor finding was closed with no discussion of the CAP action.
- A minor finding was closed with no basis specified.
- A minor finding was closed with a notation that additional review would be performed by SFO in the future, with no means to track its completion.

Although not all of the open issues may be directly linked to nuclear safety, they were identified by organizations with nuclear safety responsibilities. Deficiencies in quality assurance or work planning and control can adversely affect nuclear safety. SFO should better manage safety issues in a controlled, timely, and effective manner, and in compliance with established processes and procedures. The status data evaluated in ePegasus for many of the issues in the sample selected by the review team does not appear to reflect an appropriate level of rigorous management (see **OFI-SFO-4**).

After these concerns were identified to SFO, they performed a status review of 19 open significant and minor findings identified by the Nuclear Operations organization, with two findings dating back to October 2010. As a result of this review, SFO closed 7 of the issues and identified the remaining as “active” with action validation to be performed during a self-assessment scheduled to be conducted in May 2014 in lieu of a Chief for Defense Nuclear Safety review.

5.4 Contractor Performance Evaluation

Review/Inspection Criteria:

DOE line management has established and communicated performance expectations to contractors through formal contract mechanisms. Such expectations (e.g., safety performance measures and

commitments) are established on an annual basis, or as otherwise required or determined appropriate by the Field Element. (DOE Order 226.1B, 4c) CRAD 45-21, Inspection Criteria 5.

Review/Inspection Criteria:

DOE line management has effective processes for communicating oversight results and other issues in a timely manner up the line management chain, and to the contractor as appropriate, sufficient to allow senior managers to make informed decisions. (DOE Order 226.1B, 4d) CRAD 45-21, Inspection Criteria 6.

SFO performs contract-based annual performance evaluations, including quarterly status updates that support annual performance fee determinations. These evaluations are performed as described in formal procedures that detail the development of performance evaluation plans (PEPs), PERs, and quarterly status reports, and methods for communicating results to the contractor. Independent Oversight reviewed the fiscal year (FY) 2010, 2012, and 2013 PEPs for Sandia, the associated FY 2012 PER/award fee determination report, and the mid-year FY 2013 PER. NNSA significantly revised the approach to contractor performance evaluations for FY 2013 and now uses what it characterizes as a “Strategic PEP with fewer and much less detailed, task-specific performance measures.” Comparison of the FY 2010 and FY 2013 PEPs highlight the change in approach. In 2010, the PEP identified 20 general performance measures for six performance objectives and 19 performance-based incentive measures with 51 associated specifically defined performance targets (e.g., “Sandia will complete removal of the Highly Enriched Uranium Scrap by end of September 2010”). The FY 2013 PEP included 30 NNSA-wide generic measures in five general performance areas, with each measure describing general “contributing factors” (e.g., deliver efficient, effective, and responsive ES&H management and processes). The FY 2013 PEP also specified 11 site-specific outcomes (e.g., maintain and demonstrate effective utilization of an approved comprehensive, transparent, and integrated CAS). At least three of the FY 2013 PEP measures and one of the site-specific outcomes directly involved nuclear safety related performance improvement. The contractor leadership objective cited, as contributing factors, “creating a work environment that achieves compliant and effective safety performance and leading a culture of critical self-assessment.” However, no specific measures, targets, or deliverables were identified for this objective. The lack of specificity in the new PEP objectives provides for less direct communication of expectations to the contractor, specifies no commonly understood measures of performance, and will result in a more subjective evaluation of performance by both the contractor and DOE. The strategic performance evaluation approach has provided more flexibility to evaluations and more consistency of input to NNSA headquarters on NNSA complex-wide performance, but has resulted in less specifically defined expectations, objectives, and measures for driving site-specific contractor performance improvement (see **OFI-SFO-5**).

SFO management believes that the current Strategic PEP and its guidance that originates in NNSA HQ provides needed flexibility and focuses the contractor’s efforts on program- and process-level performance improvement rather than on completing individual tasks. However, the details of the methodology used by SFO staff and management to develop PERs are not well established in site procedures, and results are not supported by easily accessible objective evidence. Evaluation of contractor performance is done empirically rather than through a structured analysis of performance data. Although SFO oversight procedures describe the importance of an effective CAS as a basis for evaluation of performance, data related to CAS effectiveness is not effectively or consistently documented in ePegasus. Further, deficiencies in the CAS processes and performance are longstanding issues formally identified by SFO and by HSS in integrated safety management reviews conducted in 2003, 2005, and 2008. The contractor acknowledges these deficiencies and has spent much effort to address them. However, no formal assessment of the CAS has been performed by SFO for several years, although joint SFO and Sandia effectiveness reviews of assessment and issues management corrective actions are planned for FY 2014. SFO staff and management have had less formal engagement with the contractor,

and guidance provided to the contractor has been informal (e.g., through meetings, contractor improvement plan reviews and input, and shadowing contractor CAS “maturity assessments”). The FY 2013 PER provided a thorough and comprehensive narrative summary of performance for each of the PEP objectives. However, evaluation details are sometimes based on undocumented observations and on conclusions by evaluators without supporting data evidence, such as the results of formal assessments or operational awareness. Performance data to support contractor evaluations is not easily retrieved from the ePegasus assessment and issues management reporting tool (see also **OFI-SFO-3**).

SFO management and staff are aware of weaknesses in the current processes for overseeing, evaluating, and communicating contractor performance, and have initiated a formal review of their oversight program to provide a more structured approach. The 2012/2013 SFO operations plan outlines objectives and actions to improve the quality of PERs and to evaluate the SFO line oversight assurance system. Formal review of the oversight program is underway. An SFO performance review charter was issued in December 2013, signed by all assistant managers and approved by the SFO manager, which outlines the process and roles and responsibilities for performance review with an emphasis on using issues and trend code data from ePegasus as the basis for evaluations, and use of a documented review template and performance chart of PEP defined contributing factors and functional area elements. The new approach will require more rigorous entry of oversight activity issues and trend code data into ePegasus, and revision of existing SFO oversight process and procedure documents. Training and piloting of this new oversight approach is planned to begin in the spring of 2014 (see also **OFI-SFO-1**).

5.5 Facility Representatives

Review/Inspection Criteria:

DOE line management provides appropriate oversight of conduct of operations. The DOE Field Element assigns DOE facility representatives to oversee conduct of operations in accordance with DOE-STD-1063-2011, Facility Representatives. (DOE Order 422.1, 4b) CRAD 45-21, Facility Representative Program Inspection Criteria.

SFO has established an effective FR program as defined in DOE-STD-1063-2011, *Facility Representatives*, for qualifying staff to monitor the safety performance and the day-to-day operational status of their assigned facilities. SFO procedure 1304.07, *Policy Guidance and Expectations for Nuclear Facility Representative*, is the current implementing document for the nuclear FR program.

FRs are trained and qualified in accordance with SFO procedure 0603.03, *Technical Qualification Program*. As required by STD-1063, the SFO FR qualification includes the DOE-STD-1151 FR functional area qualification standard and additional site/facility-specific competencies. Candidates must successfully pass a facility walkthrough, a written examination, and an oral board for full qualification, with requalification required every five years. Provisions also allow for interim FR qualification leading to full qualification and the continuing training program is managed in accordance with the technical qualification program plan. Independent Oversight reviewed the qualification cards and training records for several FRs, the facility-specific qualification standard for Technical Area V (TA-V), and the position-specific qualification standard for non-nuclear FR, and determined that the FRs are well trained and qualified.

SFO previously approved an FR staffing analysis in September 2011 in accordance with DOE-STD-1151 and determined that it needed an average of 3.14 full-time equivalents (FTE) for nuclear facilities and 2.50 FTE for non-nuclear facilities categorized as radiological or moderate hazard. SFO completed an updated FR staffing analysis in February 2014 (in progress during this review) and determined it needs 1.35 FTE for nuclear facilities and will no longer provide consistent FR coverage of the remaining non-nuclear facilities/activities at SNL. Since the 2011 analysis when SFO had three nuclear and three non-

nuclear FRs qualified and assigned, recent retirements and reassignments have left the field office with only two fully qualified nuclear FRs and one non-nuclear FR, who now serves as the FR program coordinator. One of the two nuclear FRs is being cross-trained for another assignment, but a safety system oversight staffer is qualifying as a nuclear FR to provide backup coverage at TA-V. Also since the 2011 analysis, SNL has downgraded one nuclear facility to non-nuclear and expects to downgrade three other facilities/activities by the end of 2014. It is expected that SNL's nuclear footprint at TA-V will shrink to only two reactor facilities which could be adequately covered by a single FR.

Independent Oversight generally agrees with the recently completed staffing analysis. When one non-nuclear FR retired and another moved to a new assignment, SFO management made a decision to keep the remaining non-nuclear FR active but did not provide any updated guidance for oversight coverage at the 16 non-nuclear facilities/activities. Until recently, Sandia has included a CONOPS matrix for its non-nuclear hazardous facilities, which the field office reviews but is not required to approve, and SFO has provided non-nuclear FR coverage in accordance with STD-1063; however, per contract these non-nuclear facilities are not subject to DOE Order 422.1 requiring CONOPS and FRs, so Sandia and SFO have actually been exceeding requirements, which has worked well. As NNSA moves forward to reduce costs across the complex and rely more upon CAS oversight of non-nuclear facilities, some non-mandatory FTE will also likely be reduced. As SFO transitions to a new oversight model for non-nuclear hazardous facilities, management needs to clarify its expectations for both its staff and the contractor (see **OFI-SFO-6**).

In accordance with SFO procedure 1304.07, nuclear FRs are to provide the "eyes and ears" for field office management through routine day-to-day activities, OAAs, and formal assessments. FRs are expected to maintain at least 65% of their time performing FR duties. Procedure 1304.07 provides explicit management expectations for FRs, such as keeping a record of their activities and observations in a log, preparing weekly reports, and communicating any safety or operational concerns to SFO management and Sandia line management. Independent Oversight observed the FR daily routine at the ACRRF in TA-V, and at two non-nuclear facilities (Z-Machine and the Microsystems and Engineering Sciences Applications complex). Independent Oversight also reviewed several weekly summary reports and discussed how data entries are made into a FR oversight spreadsheet used for tracking and trending of issues; SFO is using this spreadsheet tool to identify potential trouble areas. Where FRs used to conduct reviews of six of 18 CONOPS chapters each year, they will now conduct formal assessments on only two trouble areas and use OAAs and other assessments as needed to review four other CONOPS chapters each year. As SNL's nuclear footprint is shrinking to only two reactors, Independent Oversight concurs that this is a reasonable approach. Based on these observations and on discussions with several FRs, Independent Oversight determined that FRs provide effective oversight of their facilities, adequately communicate their results to line management, and receive adequate functional support from line management for their activities.

6.0 CONCLUSIONS

SFO has established and implemented generally effective programs and processes for conducting routine periodic and collective oversight of Sandia's management and operation of nuclear safety systems and related activities at SNL. FRs and SMEs provide effective assessments and continuous routine operational awareness and surveillances, and provide feedback to the contractor and DOE management in nuclear safety and other areas. Safety issues are being identified, documented, and communicated to the contractor for resolution. Quarterly and annual formal contractor performance evaluations to contract requirements are performed and used as a basis for annual performance fee determinations.

Independent Oversight acknowledges that SFO implements a compliance-based approach to nuclear

facility oversight and a graded approach to oversight of all other non-nuclear activities. Notwithstanding the generally comprehensive oversight described above, there are weaknesses in oversight policy, procedures, and oversight performance that management and staff should address. The most significant weaknesses include: oversight procedures lack sufficient detail in many areas, SFO evaluation of the CAS effectiveness is inconsistent, and issues identified by SFO in contractor process and performance evaluations are not being effectively managed.

7.0 FINDINGS

None.

8.0 OPPORTUNITIES FOR IMPROVEMENT

This independent oversight review identified seven OFIs. These potential enhancements are not intended to be prescriptive or mandatory, and do not require formal resolution through the corrective action process. Rather, they are suggestions offered by the Independent Oversight review team that may assist site management in implementing best practices, or provide potential solutions to minor issues identified during the conduct of the review. In some cases, OFIs address areas where program or process improvements can be achieved through minimal effort. It is anticipated that these OFIs will be evaluated by the responsible line management organizations and either accepted, rejected, or modified as appropriate, in accordance with site-specific program objectives and priorities.

OFI-SFO-1: SFO should prioritize and ensure finalization of its oversight reengineering effort, including updating applicable policies, procedures, and guidance.

OFI-SFO-2: SFO should take action to ensure that CAS evaluation information is included in its documented assessment, OAA memoranda, and reports in ePegasus, pending full implementation of new oversight program and trend coding.

OFI-SFO-3: SFO should review and strengthen its issues management procedures to address weaknesses described in this review.

OFI-SFO-4: SFO should review and update the status of all open safety issues in ePegasus. SFO should establish effective interim mechanisms to monitor and ensure that issues entered into ePegasus are being followed up with CAPs and actions that are approved, verified, and closed in a timely and effective manner and ensure that new oversight procedures being developed incorporate these control mechanisms.

OFI-SFO-5: SFO should consider identifying additional detailed, task-specific performance objectives and measures to supplement the site-specific element of the Strategic PEPs.

OFI-SFO-6: SFO should update its expectations and protocols for oversight of non-nuclear hazardous facilities.

Appendix A Supplemental Information

Dates of Review

Onsite Review: January 20-23, 2014

Office of Health, Safety and Security Management

Glenn S. Podonsky, Chief Health, Safety and Security Officer

William A. Eckroade, Principal Deputy Chief for Mission Support Operations

John S. Boulden III, Director, Office of Enforcement and Oversight

Thomas R. Staker, Deputy Director for Oversight

William E. Miller, Deputy Director, Office of Safety and Emergency Management Evaluations

Quality Review Board

William Eckroade

John Boulden

Thomas Staker

William Miller

Michael Kilpatrick

Independent Oversight Site Lead

William A. Macon, Jr.

Independent Oversight Reviewers

William A. Macon, Jr. – Lead

Robert M. Compton

Appendix B

Key Documents Reviewed, Interviews, and Observations

Documents Reviewed (relative to the Findings, OFIs, and report conclusions)

- *Assistant Manager for Environment, Safety and Health (AMES&H) Expectations for Oversight planning, Reporting and Documentation, Rev 1 (8/2/2011) and Rev 2 (10/15/2012)*
- *ASM-NO-5.2.2011-344839, Sandia Site Office Facility Representative Staffing Analysis Report, 5/19/2011*
- *ASM-NO-10.1.2012-469223, Sandia Field Office Facility Representative Staffing Analysis Report, 2/3/2014*
- *PI-6.2.1a, Governance and Oversight Project Execution Plan, Version 0.0, 1/28/2010*
- *Facility-Specific Qualification Standard for Facility Representative, Technical Area V (TA-V), 6/2009*
- *FY 2012 and FY 2013 Assistant Manager of Nuclear Operations Oversight Plan and Schedule*
- *FY 2012 Performance Evaluation Plan for Sandia Corporation, Rev 5, 7/31/2012*
- *FY 2013 Performance Evaluation Plan for Sandia Corporation, Rev 0, 9/2012*
- *FY 2014 Director of Performance Assurance Oversight Plan and Schedule, Rev 0, 9/16/2013*
- *FY2014 Integrated Assessment Schedule*
- *FY2014 Office of Engineering Oversight Plan and Schedule*
- *FY 2014 DOE/NNSA Performance Evaluation Plan for Sandia Corporation, Rev 0, 11/2013*
- *FR Oversight Spreadsheet Desk Guide*
- *Letter from SFO AMNO to Sandia National Laboratories Vice President, Science and Technology, providing oversight feedback for the 4th quarter, FY 2012, 12/10/2012*
- *Memorandum, Sandia Site Office Non-Nuclear Facility Representative Protocol, McFadden, 8/11*
- *NNSA FY 2012 Performance Evaluation Report of Sandia Corporation*
- *NNSA FY 2013 Performance Evaluation Report of Sandia Corporation, Rev 0, 11/13/2013*
- *NNSA Policy Letter NAP-21, Transformational Governance and Oversight, Rev 0, 2/28/2011*
- *Position-Specific Qualification Standard for Non-Nuclear Facility Representative, Technical Areas I and II, 8/2011*
- *SBMS 0804 (Policy), Sandia Site Office Oversight, Rev 0, 8/18/2010*
- *SBMS 0804.01 (Process), Plan, Manage, and Improve SSO Oversight, Rev 0, 8/18/2010*
- *SBMS 0804.01.01 (Procedure), SSO Oversight Plans, Schedules, and Revisions, Rev 1, 8/2012*
- *SBMS 0804.01.02 (Procedure), SSO Oversight Performance Monitoring, Rev 0, 8/18/2010*
- *SBMS 0804.01.03 (Procedure), Compliance Based Assessment Determination, Rev 0, 8/18/2010*
- *SBMS 0804.01.04 (Procedure), SSO Self Assessments, Rev 0, 8/18/2010*
- *SBMS 0804.01.05 (Procedure), SSO Issues Management, Rev 0, 8/18/2010*
- *SBMS 0804.01.06, (Procedure), SSO Oversight Exception, Rev 0, 8/18/2010*
- *SBMS 0804.01.07 (Procedure), SSO Oversight Continuous Improvement, Rev 0, 8/18/2010*
- *SBMS 0804.02 (Process), Evaluate Contractor Performance Using the SSO/Sandia Governance Approach, Rev 1, 5/14/2012*
- *SBMS 0804.02.01 (Procedure), Operational Awareness Activities supporting SSO's Governance Approach, Rev 0, 8/18/2010*
- *Sandia Site Office 2012/2013 Operations Plan, Rev 1, 4/2012*
- *SBMS 0804.02.02 (Procedure), Reporting Contractor Performance, Rev 1, 9/2012*
- *SBMS 0804.02.02.03 (Guidance), Managing Contractor Performance Concerns under the SSO Governance Approach, Rev 0, 3/2011*
- *SBMS 1001.06 (Procedure), Performance Evaluation Plan, Rev 1, 9/2012*
- *SBMS 1001.07 (Procedure), Performance Evaluation Report, Rev 1, 9/2012*

- SBMS 0804.03 (Process), *Evaluate Contractor Performance using Compliance-Based Oversight*, Rev 0, 8/18/2010
- SBMS 0804.03.01 (Procedure), *Compliance-Based Operational Awareness Activities*, Rev 0, 8/18/2010
- SBMS 0804.03.02 (Procedure), *Compliance-Based Contractor Assessments*, Rev 2, 8/2012
- SBMS 0804.03.03 (Procedure), *Compliance-Based Contractor Issues Management*, Rev 0, 8/18/2010
- SBMS 0804.05 (Work Instruction), *ePegasus with respect to SSO Oversight Procedures*, Rev 2, 6/15/2011
- SBMS 1304.02 (Procedure), *Guidance and Expectations for Nuclear Safety Management Program Assessment*, Rev 0, 10/3/2012
- SBMS 1303.04 (Procedure), *Lessons Learned*, Rev 2, 10/20/2011
- SBMS 1303.02 (Procedure), *Nuclear Criticality Safety Program Oversight*, Rev 5, 7/19/2012
- SBMS 1303.01 (Procedure), *Safety Basis*, Rev 4, 10/27/2013
- SBMS 1304.05 (Procedure), *Facility Representative (FR) Stop Work*, Rev 4, 7/11/2013
- SBMS 1304.07 (Procedure), *Policy Guidance and Expectations for Nuclear Facility Representative*, Rev 2, 8/26/2013
- SBMS 1304.08 (Procedure), *Conduct of Operations Matrix Review Guide*, Rev 2, 11/1/2011
- SBMS 0801.01 (Procedure), *SSO Operations Plan Development*, Rev 0, 8/18/2010
- SFO Operating Procedure 1304.07, *Policy Guidance & Expectations for Nuclear Facility Representatives*, Rev 2, 8/26/2013
- *SFO Office of Operations FY 2014 Oversight Plan & Schedule*, Rev 0, 9/18/2013
- *SFO Operations FY2014 Oversight Plan and Schedule*, Rev 0, 9/18/2013
- *SFO Performance Review Charter*, 12/13/2013
- *SFO Periodic Contractor Performance Evaluation Report* for Oct-Dec 2012, 2/2013
- *SSO 2012/2013 Operations Plan*, Rev 1, 4/2012
- SSO Oversight Bulletins Number 1 through 7, Various Titles, 11/2010 through 2/2012
- *SSO Oversight Plan and Schedule* for FY 2012 (Rev1), 2013 (Rev 2), and 2014 (Rev 0)
- ePegasus issues management reports
- 22 SFO assessment reports of Sandia Corporation programs, processes and performance at SNL nuclear facilities conducted in 2012 and 2013
- 5 SFO self-assessments of SFO nuclear safety related programs and performance
- Approximately 10 Nuclear Facility Representative Weekly Activity Reports for CY 2013

Interviews

- Acting Deputy Manager and Director of Performance Assurance
- Assistant Manager, Contract Administration and Business Management
- Assistant Manager, Engineering
- Assistant Manager, Operations
- Engineering Group Subject Matter Expert, Conduct of Operations and Startup/Restart
- Engineering Group Subject Matter Expert, Safety Basis
- Engineering Group Subject Matter Expert, Safety Systems, Nuclear Training, Nuclear Maintenance
- Nuclear Facility Representatives
- Operations Subject Matter Expert, Lessons Learned
- PEP/PER Manager
- Performance Assurance Specialist

Observations

- Observed meeting where contractor presented an update to SFO management on the corrective and preventive actions taken regarding life cycle materials management in response to prior events and SFO concerns for reducing risks associated with unneeded explosives, chemicals, and radiological materials (i.e., identification, evaluation, and disposal).
- Toured TA-V ACRR facility with FR
- Toured TA-IV Z-Machine facility with FR Program Coordinator and listened in on an FR Steering Committee conference call
- Toured TA-I Microsystems and Engineering Sciences Applications Complex with former FR