



Department of Energy  
National Nuclear Security Administration  
Washington, DC 20585

April 22, 2009

OFFICE OF THE ADMINISTRATOR

The Honorable A. J. Eggenberger  
Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, NW  
Suite 700  
Washington, DC 20004-2901

Dear Mr. Chairman:

This letter reports on the implementation of the Department of Energy (DOE) Operating Experience (OPEX) program for the National Nuclear Security Administration (NNSA) as specified in Commitment 19b of the DOE's Implementation Plan, Revision 2, October 12, 2006, for Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*.

In February 2008, NNSA issued a revision to the Safety Management Functions, Responsibilities and Authorities Manual to clearly define NNSA's organizational responsibilities for DOE Order 210.2, *DOE Corporate Operating Experience Program*. Oversight of the corporate OPEX program is the responsibility of the Senior Advisor for Environment, Safety and Health, NA-3.6.

In 2008, NNSA continued to strengthen its corporate OPEX program as outlined in DOE Order 210.2. This included continued integration of work performed in several areas of implementation including within the Integrated Safety Management (ISM) Core Function "Feedback and Improvement" and close collaboration with the Office of Health, Safety and Security and other program offices in the program implementation.

All seven of NNSA's nuclear sites have been reviewed by the Office of the Chief Defense Nuclear Safety. The reviews of the operating experience/Lessons Learned program implementation have shown that the NNSA site contractors have implemented programs, with some identified areas of improvement. OPEX program implementation for the Federal elements (Headquarters, Site Offices) were in different stages of implementation, all with corrective actions underway in 2008. Enclosed is a status report of the various efforts taken by NNSA during 2008 to improve implementation of the OPEX program.

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If you have questions, please contact me at (202) 586-5555 or Frank Russo at (202) 586-8395.

Sincerely,

A handwritten signature in black ink, appearing to read "T.P. D'Agostino". The signature is written in a cursive, somewhat stylized font.

Thomas P. D'Agostino  
Administrator

Enclosure

cc: Andy Wallo, HS-20

# **NNSA Progress Report on the Implementation of DOE O 210.2, *DOE Corporate Operating Experience Program*, for Calendar Year 2008**

## **NNSA Headquarters Program Implementation:**

### **A. General Efforts**

The NNSA Functions Responsibilities, And Manual (FRAM), approved in February 2008, assigned responsibility for the corporate oversight of the NNSA Operating Experience (OPEX) Program to the Office of the Senior Advisor for Environment, Safety and Health, NA-3.6. NA-3.6 has prepared an interim draft OPEX Program procedure to manage the corporate NNSA Program. The procedure will be finalized in 2009 after it is reviewed by the affected NNSA organizations.

NA-1 SD 450.4-1, *NNSA Headquarters Integrated Safety Management System Description*, issued October 23, 2007, provides detailed steps that NNSA uses to communicate best practices, Lessons Learned, and operating experience, see Section 6.2.5. Some key activities are described below.

NA-3.6 provides comprehensive quarterly safety briefings to the Administrator and senior NNSA managers that capture significant safety concerns, as well as, areas showing improvement, along with recommendations on areas of weaknesses that need improvement and line management focus.

NA-3.6 reviewed the EM Criteria Review and Approach Documents (CRAD), while in draft form, and strongly endorsed them, but has not formally required that the NNSA organizations use them for their self-assessments. That requirement will be implemented by July 2009.

NNSA is a member of the DOE Operating Experience Committee and actively participates in the DOE OPEX monthly conference calls. NNSA participates in the semi-annual comprehensive meetings of the DOE OPEX Coordinators. In addition, NNSA has separate conference calls with its OPEX coordinators to discuss its specific issues.

The Office of Defense Nuclear Security has implemented a robust Lessons Learned Program that captures Lessons Learned and best practices from across the DOE complex. The program is fully integrated with the DOE OPEX program. This program is briefly described below.

The Office of Project Management, NA-54, undertook an evaluation of Lessons-Learned software for project management and has selected software to beta-test a Lessons Learned Program for one year.

## **B. Office of Defense Nuclear Security:**

The Office of Defense Nuclear Security established the NNSA Security Lessons Learned Center (SEC-LLC) at LANL in 2007 which has become a robust program to share Lessons Learned data on physical security-related issues. The SEC-LLC is the repository and forum to share Lessons Learned and best practices to address common security issues, improve the efficiency of the security program, help prevent security incidents and support the implementation of better policies, procedures, and systems to better manage security risks.

Communication is a vital component of the SEC-LLC program. The SEC-LLC has established an infrastructure which includes a database, website and help desk. The SEC-LLC is fully integrated with the DOE-wide Lessons Learned program. The SEC-LLC is the sole conduit for uploading security-related Operating Experiences into the Health Safety Security Lessons Learned Database. The SEC-LLC currently maintains twenty functional area distribution lists with approximately 503 unique contacts within the DOE/NNSA community. These contacts routinely receive targeted communications related to security alerts and concerns, recently posted Operating Experiences, security tips/posters/presentations, analysis of various security incidents, quarterly reports, etc.

A summary of the SEC-LLC activities in FY 2008 include:

- Established a centralized infrastructure to promote the sharing and utilization of security-related operating experiences across the DOE/NNSA complex ([www.dns-lessons.lanl.gov](http://www.dns-lessons.lanl.gov))
- Compliant with DOE O 226.1A and DOE O 210.2.
- Operated since September 2007, the SEC-LLC has:
  - Evaluated and communicated nearly 70 security-related Operating Experiences
  - Prepared and shared over 158 communications
  - Increased targeted communications from 12 to ~502 S&S personnel across the DOE/NNSA complex
  - Maintained an average website hits of nearly 80/day

A number of activities planned for the SEC-LLC during 2009 include:

- Continued participation on the Metrics, Resources, Events, and LL Attributes Sub-committees of the HSS Operating Experience Committee
- Assisting the NNSA Leadership Coalition in the development of a complex-wide approach to trending and metrics for Incidents of Security Concern (IOSC)
- Production of the *Performance Improvement Quarterly News Bulletin*, a newly created security communication

- Conducting a data collection and analysis exercise on complex-wide destruction capabilities and available shared resources
- Beginning a process whereby significant information from pre- and -post audits will be gathered and provided in a short synopsis format relative to a topical and/or sub-topical area and posted on the SEC-LLC website with links to the entire report
- Preparation of a summary report on the recent Administrator's directed review of Unauthorized Discharges across the NNSA complex, with a review for commonality and present areas for potential Human Performance Improvement initiatives
- Integration of Human Performance Improvement principles into the security arena

### **C. CDNS Reviews:**

During 2008, four NNSA Site Offices/sites were reviewed by CDNS on the implementation of the OPEX program under the Feedback and Improvement Programs CRAD – Nevada Site Office, Livermore Site Office and the Sandia Site Office. The Savannah River Site Office also underwent a CDNS review, but because the M&O OPEX program is managed by the Office of Environmental Management, this area was not reviewed by CDNS. The CRAD used by CDNS is at the programmatic level and requires that the Site Office “...procedures and mechanisms ensure that the contractor and the Site Office develop and monitor Lessons-Learned Programs. A process is established for reviewing occurrence reports and approving corrective action reports (NNSA FRAM).” CDNS determined that NSO did not fully meet the CRAD because of lack of integration with the NNSA Corporate program, but that LSO and SSO did. NSO corrected the deficiencies cited by the CDNS review.

### **Field OPEX Programs**

In general terms, the NNSA M&Os have incorporated DOE O 210.2 into their contracts and have implemented compliant programs with the identified deficiencies (self-assessments, HS-64 and CDNS reviews) being addressed by corrective action plans. However, not all Site Offices have implemented formal procedures/processes to provide the necessary oversight of the M&O programs and to implement the Federal component of the OPEX program, i.e., those Lessons Learned that are specific and applicable only to the Federal staff.

A status summary of the seven nuclear NNSA sites follows:

## **A. LASO/LANL**

Implementation of OPEX at LASO and LANL improved in 2008. LASO selected an experienced OPEX Coordinator and issued a procedure to formally document the implementation of its OPEX program, including oversight of LANL's program. LASO's focused on gathering and distributing Lessons Learned from external sources. LASO plans to conduct a self-assessment during FY 09 to evaluate the effectiveness of the program.

LANL implemented a procedure to review, categorize based on risk, and disseminate Lessons Learned. For those Lessons Learned that result in actions/issues to be tracked, LANL uses its institutional Issues & Corrective Action Management process.

Performance measures were also implemented to monitor the implementation of the OPEX program, which include measures such as the number of unique users using the Lessons Learned website, hits per day, Lessons Learned archive trend, and implementation of the annual improvement plan. A notable statistic is that over the last two years, LANL has successfully improved the number of unique users using the system from 150 to nearly 1500 on a monthly basis.

## **B. LSO/LLNL**

LSO has established the Lessons Learned and the Operational Experience programs (OPEX) as two separate and distinct programs; therefore creating roles for an OPEX manager and a Lessons Learned coordinator. A newly created document which implements the DOE Order 210.1 has been developed detailing the roles and responsibilities of the OPEX manager. A document implementing the Lessons Learned role has already been developed.

LSO issued a Work Instruction for the LLNL Contractor Assurance System (CAS) activities to ensure effective CAS implementation. The work instruction lists Lessons Learned as one of the items to be observed for regularly assessing the LLNL Lessons Learned Program. An assessment of the LLNL Lessons Learned Program was planned for FY 2008, but it was postponed to focus resources on other areas. The LSO assessment is now planned for FY 2009. Ten Lessons Learned have been entered into Pegasus, and Lessons Learned are published in the Quarterly Operating Experience Reports, also available in Pegasus.

The Lessons Learned Program is fully implemented at LLNL. A previous concern with the contractor failing to finalize occurrence reports within the required time has improved performance to an acceptable level but noted the need for further reduction. The Occurrence Performance Analysis performed by the LLNL Contractor Assurance Office provides a well-written analysis of reported occurrences at LLNL and identifies areas of concern and "watch list" items for further analysis.

### **C. NSO/NTS**

NSO has implemented a Lessons Learned Program. NSO changed the OE coordinator at the end of 2008.

The M&O contractor has developed and fully implemented a Lessons Learned Program. The M&O contractor maintains a Lessons Learned database that describes lessons in detail and references an original occurrence report.

Both the Site Office and contractor spend a considerable amount of time processing Lessons Learned for wide distribution, but the process is slow. It can take months to process a Lesson Learned. NSO and NTS have streamlined the process throughout 2008 to facilitate an average dissemination time to one week from the time it is received to the time it is distributed to the DOE database.

### **D. PSO/Pantex**

Both the Pantex Site Office and the M&O have implemented DOE O 210.2 through approved procedures, processes and practices. B&W Pantex uses a wide range of materials to document the Lessons Learned from various operating experiences, such as bulletins, posters (static and computer-based) and video presentations. Lessons Learned are distributed plant-wide to divisional Lessons Learned Coordinators, who are knowledgeable of their division's programs and processes. A webpage dedicated to Lessons Learned provides links to external websites for complex and industrial/commercial Lessons Learned WebPages, a quick link to bulletins, and a link to the electronic database, where site Lessons Learned are maintained, which is searchable by various key words or functions. Distribution of the Lessons Learned is documented via the contractor's ESTARS electronic tracking system, inclusive of reviews by the Technical Training Department for inclusion into formalized training. B&W Pantex proactively seeks to include searches for applicable Lessons Learned into project and process planning, and is responding to the success with employee acceptance of the graphic bulletins and video presentations with plans to develop more bulletin and video presentations in the future. In addition to being able to review the B&W Lessons Learned, the PXSO Lessons Learned Coordinator reviews weekly the DOE Lessons Learned, DOE Occurrence Reporting and Processing System (ORPS), U.S. Chemical Safety Board (CSB), and other websites for Lessons Learned applicable to Pantex operations. These Lessons Learned are downloaded and distributed to the appropriate personnel (including the B&W Pantex Operating Experience Program Coordinator). The B&W Pantex Operating Experience Program Coordinator will then include them in the B&W Pantex Operating Experience website.

## E. SRSO/SRS

DOE O 210.2 is incorporated into the M&Os contract. The Office of Environmental Management provides direct oversight of the Lessons Learned Program. The NNSA Savannah River Site Office oversees the lessons learned program associated with the tritium operations.

The M&O program is fully implemented and performing well. The SRSO program provides good oversight of the M&O program, but communications with the NNSA corporate program need improvement.

## F. SSO/SNL

The SSO FRAM identifies the Assistant Manager for ES&H and Quality Assurance (AMESHQA) as the lead for the SSO Lessons Learned Program. The FRAM requires all SSO Assistant Managers to monitor the development and distribution of Lessons Learned associated with areas of responsibility under their purview, with assistance from the SSO Senior Technical Safety Advisor.

SSO procedure 0803.02.02, *Develop Assessment Plans*, describes how to develop an assessment plan when conducting scheduled assessments, including CAS assessments, functional (transactional-based) assessments, for-cause assessments, and self-assessments. For each assessment, the assessor is required to review and provide a listing and status of all previous findings and applicable Lessons Learned to be evaluated for effective CAP closure.

The implementation of the SSO Lessons Learned Program was evaluated by HS-64 in 2007 and received excellent comments regarding its effectiveness. In May 2008, a self-assessment of the program revealed that Lessons Learned in the security functional area was not integrated with the OPEX program. In June of 2008, the SSO Lessons Learned procedure was revised to address this issue. The SSO Lessons Learned procedure provides guidance for reviewing, screening, and tracking Lessons Learned, and describes SSO's participation in the DOE Corporate Lessons Learned program.

The SSO Facility Representative (FR) is an integral part of its Lessons Learned Program. SSO Safety Base Management System (SBMS) Procedure 1304.03, *Occurrence Reporting*, outlines the requirements and guidance for overseeing the contractor's occurrence reporting process. The procedure requires that FRs attend contractor critiques, verify causes of the events or conditions, and ensure that corrective actions address all identified causes and that all lessons learned are clearly described. These actions are verified, documented, and entered into Pegasus. This provides SSO with the ability to track and trend contractor performance data related to the occurrence reporting process.



SSO also initiated several best practices that were transmitted throughout the DOE complex. For example, SSO submitted a best practice on ensuring the safety of student workers, which resulted in a reduction of incidents at SNL and other DOE sites. In addition, SSO identified and shared a best practice related to counterfeit parts that resulted in a re-examination of hoisting and rigging equipment across the Department in 2007. In addition to identifying best practices, SSO also analyzes and incorporates best practices from other DOE sites; the adoption of Pegasus as SSO's issues management system being only one of many examples.

#### **G. YSO/Y-12**

DOE O 210.2 is incorporated into the Babcock & Wilcox Technical Services Y-12 contract. Y-12 has a mature OPEX program and recent assessments by HS-64 and the Y-12 OPEX program manager have identified a few areas for improvement but have not identified any significant weaknesses or deficiencies in implementation. Y-12 is a member of the DOE Operating Experience Committee and participates in several of its working groups, such as, the Metrics, Resources, Events, and LL Attributes.

The Y-12 Site Office has recently approved an OPEX/Lessons Learned procedure, which formally establishes the NNSA YSO OPEX program.

#### **Conclusion:**

NNSA relies considerably on the DOE OPEX Program to improve the performance of its activities. As indicated above, a number of steps were taken in 2008 to augment the DOE Program at Headquarters, the Site Offices, and the M&Os. Whereas the M&O programs are fully implemented, the Federal component of the programs still need improvement. During 2009, NNSA will continue to strengthen its program, especially the Federal component, and will focus on the evaluation and dissemination of best practices.