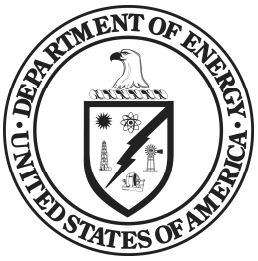

U.S. Department of Energy
Office of Inspector General
Office of Audits and Inspections

Audit Report

Follow-up Audit of the Stockpile Surveillance Program

OAS-L-12-10

September 2012

Department of Energy
Washington, DC 20585

September 13, 2012

MEMORANDUM FOR THE DIRECTOR, OFFICE OF TECHNOLOGY
MATURATION AND STOCKPILE ASSESSMENT
DIRECTOR, OFFICE OF NUCLEAR WEAPON STOCKPILE
SENIOR TECHNICAL ADVISOR FOR SURVEILLANCE,
NATIONAL NUCLEAR SECURITY ADMINISTRATION

FROM: David Sedillo, Director
Western Audits Division
Office of Inspector General

SUBJECT: INFORMATION: Audit Report on the "Follow-up Audit of the Stockpile Surveillance Program"

BACKGROUND

The Department of Energy's National Nuclear Security Administration's (NNSA) stockpile surveillance program provides information on the status of the Nation's nuclear weapons stockpile. Through a variety of tests, the surveillance program detects stockpile defects due to handling, aging, manufacturing, or design. Surveillance test results are used to support NNSA's annual stockpile assessments.

In 2007, NNSA initiated the Surveillance Transformation Project (STP) to accelerate the surveillance program to look for changes in an aging stockpile. The transformation called for an increase in evaluations of nonnuclear components and materials (CMEs) and a reduction in annual tests of weapons systems (laboratory) tests. In August 2009, the Office of Inspector General (OIG) issued a report entitled *Follow-Up Audit of the Stockpile Surveillance Program* (OAS-L-09-16, August 2009), which disclosed that the STP had the practice of eliminating previously identified testing backlogs. However, due to the short period of time STP was in effect, the OIG was unable to determine the effectiveness of the new approach.

In June 2011, we initiated a follow-up audit to determine whether STP goals and objectives were being met. However, during our audit, we found that NNSA had issued a *Surveillance Enterprise Study* in 2010, which concluded that the objectives of the STP were not met due to transition challenges. Consequently, we revised our objective to determine whether NNSA took actions to mitigate the STP transition challenges.

CONCLUSIONS AND OBSERVATIONS

Our review disclosed that NNSA had taken actions to mitigate the STP transition challenges identified in the 2010 *Surveillance Enterprise Study*. The *Study* stated that there were gaps in

surveillance data that were further exacerbated by the decline in laboratory tests. Furthermore, nonnuclear CMEs were not being achieved as rapidly as expected. To mitigate these challenges, NNSA:

- Achieved increased surveillance data by increasing funding and expanding laboratory tests; and,

- Developed a comprehensive plan to complete baselining nonnuclear CMEs by the end of Fiscal Year (FY) 2018.

Although NNSA mitigated STP transition challenges, we noted that it had not established an effective system of performance measurement over the Enhanced Surveillance (ES) subprogram. Specifically, NNSA measured performance according to the percentage of budget spent rather than on actual program accomplishments. After discussing our performance measurement concerns with NNSA officials, NNSA replaced the measure with one that more accurately reflects performance.

Laboratory Testing

To address concerns regarding the lack of surveillance data for the annual stockpile assessments, NNSA revised its STP approach by increasing surveillance data through expanded laboratory testing. NNSA's Laboratory Directors expressed concerns in their annual assessments about gaps of surveillance data due to a reduction in laboratory tests. For example, one Director stated that the surveillance program was not providing the data from the stockpile to meet the requirements to conduct rigorous system assessments. Consequently, in FY 2011, NNSA increased surveillance funding within the Directed Stockpile Work (DSW) program by $58 million, which enabled, among other surveillance activities, a 142 percent increase (from 24 to 58 tests) in laboratory tests. NNSA plans to continue funding the surveillance program at or above the FY 2011 level for future years. According to a senior NNSA official, the Laboratory Directors assured NNSA that the proposed out-year funding will be sufficient to perform surveillance activities to affirm confidence in the stockpile.

Nonnuclear Component and Material Evaluations

NNSA developed a plan to complete CME baselines by the end of FY 2018. One nonnuclear CME activity involved developing a baseline requiring the collection of nonnuclear component data to compare with future data in order to identify age-related change. In its FY 2010-2018 CME baselining roadmap, Sandia National Laboratories (Sandia) developed a plan to baseline 235 nonnuclear components within 14 nonnuclear component families by FY 2018. As of October 31, 2011, Sandia had baselined 63 nonnuclear components, or approximately 27 percent, of the 14 nonnuclear component families. In addition, NNSA's ES *Program Implementation Plan* (PIP) in FYs 2010 through 2012 included performance milestones for Sandia to complete all CME baselines by FY 2018.

Performance Measures

During our review, we noted that NNSA's performance measure for the ES subprogram that supports the STP was based on funding rather than actual work accomplishments. In reviewing NNSA's FY 2011 Performance Report and the ES FY 2011 PIP, we noted that ES reported that it had achieved 100 percent of its annual planned scope and 62 percent of its long-term 20-year (2003-2022) planned scope. However, in December 2011, ES officials told us that the percentage completion of performance was actually based on the budget spent for its 20-year period instead of actual work accomplishments. For example, at the end of FY 2011, ES had spent approximately 62 percent of $1.5 billion—the amount that ES projected would accomplish performance activities, including nonnuclear CME activities.

We discussed our concern with ES officials in January 2012, who agreed that they did not report actual work accomplishments in NNSA's 2011 Annual Performance Report and that reporting performance based on spending was not the best method to measure performance. As a result, ES officials told us that they deleted the measure in FY 2012 and will no longer track performance based on funding. The cumulative measure was replaced with a new measure that tracks progress toward annual deliverables on a quarterly basis. For example, ES established five deliverables for FY 2012, one of which included obtaining the assessment results for various materials and component aging.

SUGGESTED ACTION

Because our review disclosed that NNSA has taken actions in mitigating the STP transition challenges identified in the 2010 *Surveillance Enterprise Study*, we are not making any formal recommendations. However, given the importance for ES to develop and deliver aging diagnostics and predictive modeling through CMEs, we suggest that the Director, Office of Technology Maturation and Stockpile Assessment, closely monitor progress made in meeting CME requirements as defined in the ES FY 2012 PIP.

Management indicated that they will closely monitor progress made in meeting the CME requirements identified in the ES FY 2012 PIP. We appreciate the cooperation of all staff involved in this audit.

Attachment

cc: Deputy Secretary
Associate Deputy Secretary
Administrator, National Nuclear Security Administration
Chief of Staff

OBJECTIVE, SCOPE AND METHODOLOGY

OBJECTIVE

The objective of the audit was to determine whether the National Nuclear Security Administration (NNSA) took actions to mitigate the Surveillance Transformation Project transition challenges identified in the 2010 *Surveillance Enterprise Study*.

SCOPE

The audit was performed between June 2011 and July 2012. We conducted our work at the NNSA Albuquerque Complex (Albuquerque Complex) in Albuquerque, New Mexico; Sandia National Laboratories (Sandia) in Albuquerque, New Mexico; the Pantex Plant (Pantex) near Amarillo, Texas; and, NNSA Headquarters in Washington, DC.

METHODOLOGY

To accomplish the audit objective, we:

- Reviewed Department of Energy (Department) guidance, Federal regulations, policies and procedures pertinent to surveillance operations;

- Interviewed Federal and contractor personnel at NNSA Headquarters, the Albuquerque Complex, Sandia and Pantex; and,

- Reviewed reports on surveillance studies, prior audit reports and other documents related to the surveillance program.

We conducted this performance audit in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our conclusions based on our audit objectives. The audit included tests of controls and compliance with laws and regulations necessary to satisfy the audit objectives. In particular, we assessed the implementation of the *GPRA Modernization Act of 2010* and found that the Department had revised its performance measure related to addressing the Enhanced Surveillance Subprogram. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We did not rely on computer-processed data to satisfy our audit objective.

Management waived an exit conference.

IG Report No. OAS-L-12-10

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