



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

Audit Report

Y-12 National Security Complex's Waste Diversion Efforts



Department of Energy
Washington, DC 20585

July 20, 2012

MEMORANDUM FOR THE MANAGER, NATIONAL NUCLEAR SECURITY
ADMINISTRATION PRODUCTION OFFICE

FROM: *Daniel M. Weeber*
Daniel M. Weeber, Director
Eastern Audits Division
Office of Inspector General

SUBJECT: INFORMATION: Audit Report on "Y-12 National Security Complex's
Waste Diversion Efforts"

BACKGROUND

Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, mandates that each Federal facility maintain a cost-effective waste prevention and recycling program. Further, Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, requires that Federal agencies achieve a 50 percent diversion rate for construction and demolition materials and debris and a 50 percent rate for non-hazardous solid waste, by the end of Fiscal Year (FY) 2015. Waste diversion includes the prevention and reduction of generated waste through recycling, reusing or composting. Diverting materials from the waste stream generates a host of benefits including conserving energy, reducing disposal costs and contributing to a cleaner, safer environment. The Department of Energy tracks its waste diversion progress via its Pollution Prevention Tracking and Reporting System.

The Y-12 National Security Complex (Y-12) Pollution Prevention Program (Program) plays a vital role in the Department's overall waste diversion efforts. During FY 2011, Y-12 generated over 16,000 metric tons of non-hazardous solid waste, including debris from construction and demolition projects. Because of the environmental, financial and social benefits of reducing the amount of waste sent to the landfill, we initiated this audit to determine whether Y-12 was effectively diverting materials from the waste stream. This is our second in a series of reports on the Department's waste diversion efforts at select sites.

CONCLUSIONS AND OBSERVATIONS

We found that Y-12 had an established Program to divert materials from the landfill and contributed to the Department's overall waste diversion efforts through recycling and reusing of materials. Specifically, FY 2011 reports prepared by Y-12 management revealed that Y-12 had met the targets of Executive Order 13514 by diverting 58 percent of its construction and demolition debris and 50 percent of its non-hazardous solid waste from the landfill. Further, Y-12 took action to increase its current waste diversion activities. In particular, Y-12

emphasized adding at least one new recycling stream to the recycling program each year. Although it had realized significant accomplishments, we found that Y-12 was facing challenges such as budget limitations and Department restrictions on the recycling of certain scrap metals.

Y-12's Pollution Prevention Program

Y-12's Program was designed to integrate waste diversion activities across the site at both the organizational level and the employee level, and to provide feedback on progress. For example, Y-12 established a Reduce/Reuse/Recycle (3R) team to link organizations across the site with a common objective and to coordinate efforts. According to Y-12 officials, the 3R team, which included representatives from various functions across the complex, met bi-monthly to discuss pollution prevention opportunities. Y-12 also supported several activities to ensure that employees across the site were aware of the benefits of waste diversion. For instance, the Program produced a Pollution Prevention brochure to confirm both the site's commitment and employees' responsibilities for pollution prevention. To ensure that employees were notified of new and changing recycling streams, the Program also published and updated a formal recycling procedure. Further, to monitor and provide feedback to management and the Department on the progress of the Program, Y-12 used a computerized database and tracking system. Not only did this tracking system allow the site to monitor progress, it also fed into the Department's Pollution Prevention Tracking and Reporting System, thus permitting Headquarters officials to gauge the site's progress.

Y-12's approach allowed it to meet diversion targets established by Executive Order 13514 several years ahead of schedule. In particular, we noted that Y-12 diverted over 7,320 metric tons of construction and demolition debris from landfill disposal through reuse and recycling efforts, and disposed of only 5,360 metric tons. Further, we found that Y-12 had diverted approximately 1,900 metric tons, half of its non-hazardous solid waste generated, from landfill disposal.

Aside from the environmental benefits, Y-12's recycling efforts also produced revenue that helped support the Program. In FY 2011, for instance, Y-12 received approximately \$130,000 in scrap metal recycling revenues that were used to support additional property sales/reuse activities. In fact, Y-12 sought to maximize revenues by structuring recycling contracts to reflect changes in current market prices. For example, under its recycling contracts, Y-12 received \$188.50 per gross ton for recycled scrap metal in December 2009, but this amount increased to \$353.50 per gross ton in October 2011. Y-12's paper and cardboard contract was similarly structured to obtain fair and current prices.

Continuing Efforts

We found that Program officials sought to continually improve waste diversion efforts. Specifically, we noted that Y-12 periodically performed pollution prevention opportunity assessments that it considered critical to implementing sustainable practices and reducing waste generation and disposal. For example, an opportunity assessment of Y-12's on-site garage identified the potential to recycle empty aerosol cans as scrap metal. Program officials reported that the cans are now being punctured and collected for recycle rather than being disposed of in

the landfill. Further, Y-12 emphasized the addition of at least one new recycling stream to its program each year. In FY 2011, for instance, pagers and exit signs that previously had been dispositioned as waste were added to the recycling stream.

Challenges

While the Program had significant accomplishments, we found that Y-12 was facing challenges that may limit Program expansion. In particular, Program officials told us that several complex-wide activities and initiatives remain on hold due to budget reductions. In addition, we found that Y-12's scrap metal recycling had been impacted by the Department's July 2000 suspension on the release of scrap metal from posted radiological areas. In FY 2011, for example, Y-12 had disposed of rather than recycled over 1,800 metric tons of policy-encumbered scrap metal, according to Program officials. Although the suspension remains in effect, the Department has recognized that disposal of scrap metal as waste is contradictory to Departmental waste minimization and pollution prevention efforts, and is currently working to address the matter.

Despite the challenges it faces, Y-12's recent efforts to reduce, reuse and recycle waste materials resulted in a large percentage of materials being diverted from the landfill. Accordingly, no formal recommendations are being made in this report and a response is not required.

We appreciate the cooperation of your staff and the various Departmental personnel that provided information and assistance.

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 Y-12 National Security Complex (Y-12) was effectively diverting materials from the waste stream.

SCOPE

The audit was performed from October 2011 through July 2012. We conducted work at Y-12 in Oak Ridge, TN and obtained information from the Office of Health, Safety, and Security in Washington, DC.

METHODOLOGY

To accomplish the audit objective, we:

- Reviewed laws and regulations, and policies and procedures relevant to Pollution Prevention and waste diversion;
- Reviewed Y-12's Pollution Prevention Plan, Site Sustainability Plan and selected recycling contracts;
- Held discussions with Y-12 Pollution Prevention officials;
- Interviewed key personnel at the Department of Energy's (Department) Office of Health, Safety and Security; and,
- Reviewed Y-12's FY 2011 Pollution Prevention Tracking and Reporting System waste diversion entries.

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 objective. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Accordingly, we assessed significant internal controls and compliance with laws and regulations necessary to satisfy the audit objective. In particular, we assessed performance measures in accordance with the *GPRA Modernization Act of 2010* and found the Department had not established performance measures related to pollution prevention. 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 conducted an assessment of computer-processed data relevant to our audit objective and determined that it was sufficiently reliable.

Management waived an exit conference.

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