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

Audit Report

The Kansas City Responsive Infrastructure Manufacturing and Sourcing Program

OAS-L-13-12

August 2013

Department of Energy
Washington, DC 20585

August 1, 2013

MEMORANDUM FOR THE MANAGER, KANSAS CITY FIELD OFFICE

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

SUBJECT: INFORMATION: Audit Report on "The Kansas City Responsive Infrastructure Manufacturing and Sourcing Program"

BACKGROUND

The Kansas City Plant, managed and operated by Honeywell Federal Manufacturing & Technologies, LLC (Honeywell), is the Department of Energy's (Department) National Nuclear Security Administration's (NNSA) primary production site for non-nuclear weapon products. The Plant's core mission is to satisfy the Directed Stockpile Work requirements to maintain the nation's nuclear weapon stockpile by providing components that support nuclear weapon life extension programs. In addition, the Plant supports national security through its National Secure Manufacturing Center Work for Others program. As part of the Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS) Program, Honeywell is in the process of relocating the Plant operations at the Bannister Federal Complex in Kansas City, Missouri to the newly constructed National Security Campus, located about seven miles away. The move to the Campus will reduce the Plant facility footprint from approximately 3.1 million square feet to approximately 1.24 million square feet.

During and after the Plant relocation, production shutdowns are required. Additionally, some manufacturing processes and parts will have to be requalified at the Campus before the Plant can use the parts or deliver the parts to other NNSA sites. Requalification includes evaluating component production and testing of processes to ensure that quality, safety and security standards are met. During production shutdowns and the subsequent requalification periods, the Plant must meet other NNSA sites' scheduled demand for components. Given the importance of the Plant's role in satisfying Directed Stockpile Work requirements, we focused our audit on determining whether the Plant had taken adequate actions to ensure that non-nuclear components required to maintain the enduring stockpile systems are produced without delay or interruption during and after the relocation to the new manufacturing facility.

RESULTS OF AUDIT

Our review indicated that Plant officials have established plans to ensure that non-nuclear components needed to support the stockpile are available throughout the relocation and

requalification periods. Specifically, the Plant outsourced selected technologies and developed plans to build-ahead non-nuclear components to meet projected demands.

However, we identified an issue that could impact planned production. Our review established that the Plant had started planning for requalification of manufacturing processes to be used and parts to be manufactured at the Campus. We observed, however, that some of the Engineering Evaluation Plans used to evaluate processes or parts for requalification were missing information and will need to be updated on a schedule which meets production requirements. Failure to do so could potentially delay the Plant's ability to deliver critical qualified parts to other NNSA sites. According to a Plant official, the Plant initiated Requalification Readiness Assessments in April 2013, which are being conducted in a phased approach, to comprehensively review evaluation plan details, validate that planned activity was effectively integrated with Plant schedules, and to identify corrective actions if needed. The Plant anticipates completing the Requalification Readiness Assessments by May 2014.

Outsourcing of Selected Technologies

The Plant completed its plans to outsource selected technologies as part of the KCRIMS Program. The current facility houses about 40 manufacturing departments, numerous production support areas, and administrative support areas. To enable the Plant to move to the Campus with a smaller footprint, Honeywell implemented a strategy to outsource selected technologies that will eliminate redundant capabilities. For example, according to Plant officials and the KCRIMS/National Secure Manufacturing Center Nonnuclear Production Transformation Final Business Case document, plating operations at the Plant were discontinued in Fiscal Year (FY) 2009 and successfully transitioned to an outside supplier. Additionally, the Plant outsourced other technologies for manufacturing cables, selected rubber and plastic products, and printed circuit board assemblies.

According to Plant officials and the Business Case document, the Plant qualified 10 additional suppliers to support the outsourcing of selected technologies as part of the KCRIMS Program. When qualifying suppliers, the Plant reviewed factors such as ensuring the adequacy and effectiveness of the supplier's quality program and the capacity and capability to supply parts required by the Plant. By qualifying 10 additional suppliers in FY 2010, the Plant reduced its manufacturing by 204 unique parts through subcontracts with outside vendors. Currently, the Plant outsources approximately 70 percent of the parts required to support the stockpile, that is an increase from 55 percent prior to the KCRIMS Program.

Build-Ahead Parts

The Plant also implemented a build-ahead strategy to accumulate an inventory of parts to ensure scheduled deliveries will be met during production shutdowns. Specifically, the Plant began executing the build-ahead of parts in FY 2007 and will continue that effort during FY 2014 (the last departments are anticipated to shut down in April 2014) to support the KCRIMS Program. Since FY 2008, build-aheads have been in full execution and building the planned units has been a performance based incentive for the Plant. Our review of Performance Evaluation Reports from FY 2008 through FY 2012, disclosed that Honeywell met its performance measures specifically for build-aheads. Additionally, we judgmentally selected 37 different parts from NNSA's documents that forecast needed parts and the

schedule for delivery of parts from the Plant and compared the required quantity with the Plant's production and delivery schedule. Our review disclosed that the Plant had a plan in place to meet the forecasted demand for parts.

Requalification of Processes/Parts at the Campus

The Plant has started planning for the requalification of processes to be used or parts to be manufactured at the Campus. However, at the time of our review, requalification planning was still evolving. For example, the list of processes and parts being tracked for requalification increased from 295 in December 2012, to about 329 in February 2013. Additionally, some Engineering Evaluation Plans were missing information and will need to be updated. To initiate the requalification of a process or part, the Plant notifies the Design Agency[1] that a re-evaluation may be necessary after the move to the Campus. If the Design Agency determines that a re-evaluation is required, the Design Agency with Plant participation, prepares an Engineering Evaluation Plan, that identifies the requirements for re-evaluation. We reviewed the Engineering Evaluation Plans for 13 parts that we judgmentally selected and found that at least 6 plans were missing information or were still evolving. For example, the Engineering Evaluation Plan for Support A, a weapon part, stated that information concerning the qualification of items such as pads, reinforcements, protectors and covers had not been determined and would be reflected in a later revision of the evaluation plan.

According to a Plant official, the exactness or precision of the details in the Engineering Evaluation Plans can be modified at any time throughout the requalification event. The same official also stated that Requalification Readiness Assessments are currently underway at the Plant to identify execution concerns and that revisions to Engineering Evaluation Plans are likely. According to Kansas City Field Office officials, they are monitoring the Plant's performance to ensure delivery of parts to support the nuclear stockpile and that Engineering Evaluation Plans with missing information are not a concern at this time. However, in our view, any change to the Engineering Evaluation Plans that the Plant is not prepared to execute because it did not have the complete, production-ready processes could delay the Plant's ability to deliver qualified parts to other NNSA sites.

PATH FORWARD

Because the Requalification Readiness Assessments are currently underway, we are not making any formal recommendations regarding the requalification of parts and processes. However, to ensure that parts produced by the Plant after relocation will meet the Design Agencies' requirements, we suggest that the Manager, Kansas City Field Office ensure that the Plant:

- Identifies the Engineering Evaluation Plans that are evolving or missing information; and

- Coordinates with the Design Agencies to ensure that Engineering Evaluation Plans are updated.

[1] The Design Agency is an NNSA site responsible for the design of a weapon part.

Attachment

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

OBJECTIVE, SCOPE AND METHODOLOGY

OBJECTIVE

The audit objective was to determine whether the Kansas City Plant has taken adequate actions to ensure that non-nuclear components required to maintain the enduring stockpile systems are produced without delay or interruption during and after the relocation to the new manufacturing facility.

SCOPE

The audit was performed between November 2012 and June 2013. We conducted the audit at the National Nuclear Security Administration (NNSA) Albuquerque Complex in Albuquerque, New Mexico and the Plant in Kansas City, Missouri.

METHODOLOGY

To accomplish the objective of this audit, we:

- Reviewed NNSA's Program Control Documents, Nuclear Weapons Complex's Technical Business Practices, Department of Energy (Department) guidance, and policies and procedures.

- Interviewed Federal and contractor personnel at the Plant, and Federal personnel at the NNSA Albuquerque Complex.

- Identified management and operating contract requirements and performance measures pertinent to the Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS) Program.

- Reviewed plans for outsourcing of parts, equipment procurement, and other plans pertinent to the KCRIMS Program.

- Analyzed plans for build-ahead parts and reviewed a sample of judgmentally selected 37 parts. We selected our sample from the NNSA Program Control Document, that identifies the parts to be delivered by the Plant for each nuclear weapon type. We also used the W76-1 provisioning worksheet because most of the parts currently produced at the Plant supported the W76-1. Additionally, a judgmentally selected sample was used to select items other than common items such as washers, screws, gaskets and cable protectors. Because the selection was based on a judgmental sample, results and overall conclusions were limited to the items tested and cannot be projected to the entire population or universe of non-nuclear parts subject to audit.

- Obtained an understanding of the requalification of parts/processes. To accomplish our audit objective, we reviewed a judgmentally selected sample of 19 of 184 parts and processes to be qualified at the National Security Campus as part of the KCRIMS Program. We chose a non-statistical sample because of the relatively small size of the universe, and the Engineering Evaluation Plan for each part and process in the universe had a different due date. Additionally, of the 19 parts and processes, the Engineering Evaluation Plans for 6 of 19 parts/processes in our sample were not yet due or not required by the Design Agency. Because selection was based on a judgmental or non-statistical sample, results and overall conclusions are limited to the items tested and cannot be projected to the entire population or universe of parts and processes to be qualified at the Campus.

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 to the extent 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 established performance measures related to the KCRIMS Program. 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-13-12

CUSTOMER RESPONSE FORM

The Office of Inspector General has a continuing interest in improving the usefulness of its products. We wish to make our reports as responsive as possible to our customers' requirements, and, therefore, ask that you consider sharing your thoughts with us. On the back of this form, you may suggest improvements to enhance the effectiveness of future reports. Please include answers to the following questions if applicable to you:

1. What additional background information about the selection, scheduling, scope, or procedures of the audit or inspection would have been helpful to the reader in understanding this report?

2. What additional information related to findings and recommendations could have been included in the report to assist management in implementing corrective actions?

3. What format, stylistic, or organizational changes might have made this report's overall message more clear to the reader?

4. What additional actions could the Office of Inspector General have taken on the issues discussed in this report that would have been helpful?

5. Please include your name and telephone number so that we may contact you should we have any questions about your comments.

Name _____ Date _____

Telephone _____ Organization _____

When you have completed this form, you may telefax it to the Office of Inspector General at (202) 586-0948, or you may mail it to:

Office of Inspector General (IG-1)
Department of Energy
Washington, DC 20585

ATTN: Customer Relations

If you wish to discuss this report or your comments with a staff member of the Office of Inspector General, please contact our office at (202) 253-2162.

This page intentionally left blank.

The Office of Inspector General wants to make the distribution of its reports as customer friendly and cost effective as possible. Therefore, this report will be available electronically through the Internet at the following address:

U.S. Department of Energy Office of Inspector General Home Page

http://energy.gov/ig

Your comments would be appreciated and can be provided on the Customer Response Form.