



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

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# AUDIT REPORT

Materials System Inventory Management  
Practices at Washington River Protection  
Solutions

OAS-M-15-01

January 2015

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**Department of Energy**  
Washington, DC 20585

January 12, 2015

MEMORANDUM FOR THE MANAGER, OFFICE OF RIVER PROTECTION

A handwritten signature in black ink, appearing to read "David Sedillo".

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

SUBJECT: INFORMATION: Audit Report on "Materials System Inventory Management Practices at Washington River Protection Solutions"

BACKGROUND

Washington River Protection Solutions (WRPS) is the Department of Energy (Department) Office of River Protection's contractor responsible for operation of the Hanford Site tank farms. The tank farms contain more than 56 million gallons of highly radioactive waste that will be vitrified once the Waste Treatment and Immobilization Plant is complete. To maintain day-to-day operations and to support ongoing and planned upgrades, WRPS relies on the procurement and management of needed parts and materials.

As part of its overall property management system, WRPS manages inventory needed to support tank farm operations through the Tank Farm Material Services System (Materials System), which tracks inventory from receipt to issuance of the parts to the field. Parts are ordered and tracked using either a bill of materials (items being procured to support a specific work order and are tracked using the work order number) or a material request. Although the system allows queries on individual items, the items are processed and tracked within the system by the work order or material request numbers. The Materials System is then used to record information and status as to when items are ordered, received, stored in a warehouse, and issued to the field. As of August 11, 2014, the Materials System listed more than 258,000 items with an estimated acquisition cost of \$4.6 million.

Because of the significant value of the WRPS inventory, we initiated this audit to determine whether the Office of River Protection effectively managed material management activities.

RESULTS OF AUDIT

Our review determined that the Office of River Protection had not effectively managed inventory needed to support tank farm operations at WRPS. We found that WRPS could not accurately determine the number and value of items held in inventory from the Materials System. Specifically, we found:

- Not all items listed in the Materials System as being held in the company's warehouses were physically present;

- Many items held in WRPS' warehouses were not listed or were inaccurately listed in the Materials System; and
- WRPS was unable to provide a reasonable estimate of the total value or number of items held in inventory, as required by the terms of the contract.

Inaccuracies in WRPS' Materials System occurred because of internal control weaknesses at both the contractor and the Office of River Protection. Although specifically required under the terms of its contract, WRPS did not comply with Federal Acquisition Regulation (FAR) requirements to maintain accurate records and perform periodic physical inventories on Materials System items. WRPS' failure to update tracking its Materials System when projects were completed exacerbated inventory problems and resulted in the retention of parts in inventory that were no longer needed to complete work orders. Contributing to the weaknesses, the Office of River Protection's oversight of inventory management practices for the Materials System was insufficient to prevent or detect the control issues we identified. If left uncorrected, these weaknesses increase the risk that inventory items could be lost, diverted or stolen. Additionally, the Department could incur unnecessary costs and schedule delays.

### **Items Not in Inventory**

Not all items listed in the Materials System as being held in inventory could be located within WRPS controlled warehouses. During the audit, we obtained a listing from the Materials System of more than 53,000 items currently in inventory with an estimated value of \$2 million that had been held for 3 or more years as of March 17, 2014. We judgmentally selected 10 items to physically verify their existence and found that 7 of the 10 items (a 70 percent error rate), had been issued to the field and were no longer in inventory. A review of available information determined the following:

- Five items had been issued to the field between January 2009 and August 2011. These items consisted of such things as chromatography refrigerators, stainless steel cabinets and electronic components; and
- Two items had no documentation showing the items had been issued to the field. These included a laboratory tube conditioner and halogen lights.

### **Items in Inventory but Not in the Materials System**

We also found that many items currently held in inventory were either not listed in the Materials System or were listed inaccurately. In addition to the sample listed above, we judgmentally selected 23 items physically held in WRPS warehouse facilities to determine if they were properly recorded in the Materials System. Of the 23 sample items, we found 16 (a 70 percent error rate), that were either not listed in the Materials System or contained information that was inconsistent with our observations. Included in the 16 items were cables, valves, high-efficiency particulate air filters, industrial circuit breakers and laboratory valves. Specifically, we found:

- Seven items were in the staging area but could not be found in the Materials System.
- Three items were listed as being issued between 2007 and 2011 but were still in the staging area.
- Three items had discrepancies in quantities between what we observed and what was contained in the Materials System.
- One item was listed as stored in a location that is no longer used to warehouse inventory.
- One item was listed in the Materials System as being ordered, but the listing contained no information to show it was ever placed either into inventory or issued to the field.
- One item was still listed as having been issued 18 months after its associated work package had been cancelled. Listing the item as issued indicated that it was not available for use by another project. However, we determined that the item remained in inventory and was available for use by another project.

When informed of the results of our testing, a Federal management official acknowledged that our limited sample results were indicative of a systemic problem in the Materials System.

### **Estimate of Inventory**

WRPS was unable to provide a reasonable estimate of the total value or number of items held in inventory. WRPS officials provided a listing from the Materials System of all items held in inventory. The listing included data on descriptions, storage locations, quantities on hand and estimated and actual cost for 9,642 line items. The data showed a total of 258,750 individual items with an estimated cost of \$4.6 million. However, when we analyzed the data, we found a number of significant omissions and errors. For example, 3,074 line items, or 32 percent, had storage locations listed that were no longer used by WRPS to warehouse inventory. In another example, the quantities for 887 line items, or 9 percent, had values of 0, were blank or contained nonnumerical data. We found that 3,459 line items, or 36 percent, had estimated costs with values of -1, 0, were blank or contained nonnumerical data. We also found that 8,287 line items (86 percent), had actual costs recorded of either no value or contained nonnumerical data. The significant number of omissions and errors in the data preclude any attempt to use the Materials System to determine with any level of accuracy what WRPS has in its inventory and significantly affects its ability to efficiently and effectively manage parts and materials.

### **Control Weaknesses**

Requirements for strong inventory management internal controls are set forth in FAR 52.245-1, *Government Property*. The clause, incorporated in the WRPS contract, identifies key characteristics of these internal controls as the creation and maintenance of accurate records of Government property to include information on quantities, locations, disposition, and dates of transactions, as well as the performance of periodic physical inventories. In contrast to these requirements, WRPS had no means to ensure that necessary updates were made to the Materials System when the status of an inventory item changed. Another weakness was that the WRPS Materials System procedure did not call for the performance of regular physical inventories.

Additionally, WRPS' method for tracking inventory within the Materials System further contributed to the inability to effectively manage inventory by not identifying parts in inventory that were no longer needed to complete work orders. Further contributing to these internal control weaknesses at WRPS was that the Office of River Protection oversight had not focused on whether the contractor's Materials System complied with the requirements of FAR 52.245-1.

### **Recording Changes in the Materials System**

Issues with the maintenance and administration of WRPS' inventory management system prevented the contractor from ensuring that changes in inventory status were recorded in the Materials System as they occurred. WRPS' inventory management procedure directs that whenever the status of an inventory item changes (received, placed in inventory, issued, etc.), the Materials System is to be updated to reflect the change. However, neither the procedure nor the Materials System contains any steps or processes to ensure that records are updated in the system whenever changes are made. For example, the inventory management procedure only states that the Materials System is to be updated but does not contain specific instructions or requirements, such as checklists or managerial review, to ensure the updates are accurately entered. Additionally, the Materials System does not provide prompts or other means to remind or require system users to input information. Instead, it is up to the users to remember to make the updates. When we asked why the discrepant sample items were not in the Materials System, we were told that the individuals issuing the items had forgotten to update them. Without some form of checks to update the system, such as system prompts, checklists or supervisory reviews, property management officials often failed to update the system. This, coupled with other internal control weaknesses, resulted in the inability to effectively manage inventory at WRPS.

### **Not Performing Physical Inventories**

WRPS did not perform periodic physical inventories of items held in its warehouses to ensure that the Materials System was correct. In reviewing WRPS' inventory management procedure, we did not find any requirements to perform such inventories. Additionally, when we spoke to the contractor's property management officials, they indicated that they did not perform any comprehensive physical inventories of the Materials System, as required by FAR 52.245-1. The performance of regular periodic inventories is a key part of controlling, maintaining and protecting Government property by ensuring that inventory records are accurate. By not performing these inventories, WRPS is missing the opportunity to identify errors in inventory records and weaknesses within its inventory management system.

### **Inventory Tracking Methods**

WRPS' failure to update status information in its Materials System further contributed to the inability to effectively manage inventory. When ordering parts and materials in the Materials System, contractor personnel begin the process by creating a Bill of Material listing of all of the items that will be used for a specific work order. This Bill of Material is assigned the work order number and becomes the primary means for tracking the items within the system through the procurement and inventory management processes. However, the Materials System is not used to track the status of the work order. Instead, inventory management officials have to query another system to determine the status of a specific work order. Yet, officials are not required to query these other systems to determine the status of work orders. As a consequence, in situations

where items are ordered for a specific work order but not used, the materials could remain in inventory for significant amounts of time without inventory management officials being aware that they are available for other uses or for disposal. For example, project officials ordered 12 air filters to replace existing filters. The filter shipment included accessory packages (additional parts used for installation of the filters) that were not used. The work order was closed in September 2007, but the accessory packages that were not used remained in inventory without a determination as to whether they should be retained or excessed.

### **Office of River Protection Oversight**

The Office of River Protection's oversight of WRPS' inventory management practices did not ensure that the contractor fully complied with the requirements of FAR 52.245-1. Although the Office of River Protection had performed assessments and surveillances of WRPS' property management system as a whole, the reviews had not determined whether the Materials System accurately reflected the parts and materials on hand, or if the contractor was performing periodic inventories as required. We reviewed the assessments and surveillances performed by the Office of River Protection and the Defense Contract Audit Agency of WRPS' procurement and property management functions during Fiscal Years 2012 and 2013. We also reviewed six reports provided by the Office of River Protection in response to a draft version of our report. We found that none of these reviews covered the accuracy of WRPS' Materials System inventory records or the performance of regular physical inventories. Instead, the reviews focused on areas such as compliance with purchase card procurement procedures, review of purchasing files, and controls for administratively held items. Furthermore, in discussions with Office of River Protection officials, they indicated that a concern had been raised by one of its officials regarding the lack of a physical inventory being performed when the tank operations contract was turned over to WRPS from the previous contractor. When asked why the issue had not been communicated to the contractor, Office of River Protection officials could not explain. Had the Office of River Protection performed reviews specific to determining whether WRPS was in compliance with FAR requirements, it would have identified the internal control weaknesses cited above.

### **Increase in Risks**

The control weaknesses in WRPS' inventory management system, if allowed to continue, will expose the Government assets under the contractor's control to an increased risk of theft, loss, or misuse and decrease the likelihood of detecting such incidents in a timely manner. Industry consensus standards have indicated that organizations with inventory variances of 5 percent or greater are defined as "high risk." Based on the conditions identified in this report, WRPS' management of inventory by the Materials System would be considered a high risk for theft, loss or misuse.

Additionally, these control weaknesses increase the risk of the Department incurring unnecessary costs due to either ordering of additional parts and materials that are already available in inventory, or from delays in work due to parts believed to be in stock having to be reordered.

## RECOMMENDATIONS

We recommend that the Manager, Office of River Protection:

1. Direct WRPS to take the necessary actions needed to ensure their inventory management system complies with the requirements of FAR 52.245-1, including steps to:
  - a) Ensure that changes in status of inventory items are inputted accurately and in a timely manner;
  - b) Perform regular physical inventories of all items held in WRPS warehouses; and
  - c) Ensure that the status and availability of inventory items are reviewed and updated in a timely manner.
2. Ensure that Office of River Protection, Contracts & Property Management performs regular reviews of WRPS' Materials System to ensure that it complies with FAR requirements.

## MANAGEMENT REACTION

Management concurred with the report's findings and recommendations and provided corrective actions to address the issues identified in this report. Specifically, the Office of River Protection will issue a letter of direction to WRPS requesting a corrective action plan to ensure their inventory management system complies with the requirements of FAR 52.245-1. The Office of River Protection will also conduct periodic reviews of WRPS' Material System. This will include reviews of WRPS' corrective actions as well as annual reviews thereafter. Management's formal comments are included in Attachment 3.

## AUDITOR COMMENTS

We consider management's comments and planned corrective actions to be fully responsive to our findings and recommendations.

Attachments

cc: Deputy Secretary  
Acting Assistant Secretary for Environmental Management  
Chief of Staff

## **OBJECTIVE, SCOPE AND METHODOLOGY**

### OBJECTIVE

The objective of this audit was to determine whether the Office of River Protection effectively managed procurements and material management activities.

### SCOPE

The audit was performed from December 2013 through November 2014. The scope of the audit was limited to the management of materials and parts held in inventory at Washington River Protection Solutions' (WRPS) controlled warehouse facilities located on the Hanford Site near Richland, Washington. We conducted work at the Department of Energy's (Department) Office of River Protection, located in Richland, Washington, and at WRPS. The audit was conducted under Office of Inspector General Project Number A14RL050.

### METHODOLOGY

To accomplish the audit objective, we:

- Reviewed applicable laws, regulations and program guidance applicable to inventory management activities within the Department.
- Interviewed key Department and WRPS officials to discuss the processes and procedures used to manage the inventory of parts and materials.
- Discussed with Office of River Protection officials concerning their policies, procedures and practices regarding oversight of contractor inventory management practices.
- Obtained a listing for the Tank Farm Material Services System (Materials System) of all items held in inventory by WRPS as of March 17, 2014. This included a total of 1,442 lines with 53,289 individual items at an estimated value of \$2,001,359. From this listing, we judgmentally selected 10 line items consisting of 80 individual items. Selection criteria focused on items with individual estimated values of \$1,000 or greater. We then physically observed these items in the WRPS warehouses to verify that they were still in inventory.
- Judgmentally selected a sample of 13 items that were physically held in inventory for tracing back to the Materials System to verify the accuracy of inventory records. Selection of items for the sample was based on items appearing to be of significant value and with work order numbers that indicated they had been in inventory for three or more years.
- Judgmentally selected a second sample of 10 items that were physically held in inventory for tracing back to the Materials System to verify the accuracy of inventory records.

Selection of items for the sample was based on items appearing to be of significant value and with work order numbers that indicated they had been ordered by the previous tank farms operations contractor.

We did not use statistical samples during the course of this audit. As a result, we could not project the results of our analyses to the population.

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 the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Accordingly, the audit included tests of controls and compliance with laws and regulations to the extent necessary to satisfy the objective. We considered the *GPR Modernization Act of 2010* as necessary to accomplish the objective, and we determined it was not applicable to our audit scope. 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 conduct a reliability assessment of computer-processed data. However, the conclusion of our audit work and the basis of this report was that computer-processed data contained in the Materials System has sufficient errors to seriously question the reliability of the overall data contained in that system. Management waived an exit conference.

**RELATED REPORT****Government Accountability Office**

- Audit Report on [Hanford Waste Treatment Plant: Department of Energy Needs to Strengthen Controls over Contractor Payments and Project Assets](#) (GAO-07-888, July 2007). The audit found that the Department of Energy (Department) did not adequately oversee the contractor to ensure proper accountability for assets purchased with Waste Treatment and Immobilization Plant contract funds. Instead, the Department relied primarily on the contractor to manage property without adequate oversight of the contractor's property program. The audit disclosed numerous internal control weaknesses that hindered accountability and increased the vulnerability of Government property to theft or loss. For example, the audit found that Bechtel National, Inc., relied primarily on one property staff person to record assets into its Government property system, perform annual physical inventories, and update the information in the Government property system. Additionally, the audit found errors and inaccuracies in the Government property system. Bechtel National, Inc., also lacked adequate procedures for the physical inventory of construction materials and the custodial accountability of tools, contributing to inadequate accountability of Government property. These internal control weaknesses over property coupled with the lack of Department oversight created an environment in which Government property could be lost or stolen without detection.

## MANAGEMENT COMMENTS

RL-712 (02/06)

United States Government

Department of Energy

Hanford Site

**memorandum**

DATE: DEC 19 2014  
 REPLY TO:  
 ATTN OF: ORP:DH 14-ORP-0127

SUBJECT: MANAGEMENT RESPONSE TO THE OFFICE OF INSPECTOR GENERAL DRAFT  
 AUDIT REPORT ON "INVENTORY MANGEMENT PRACTICES AT  
 WASHINGTON RIVER PROTECTION SOLUTIONS."

TO: Rickey R. Hass, Deputy Inspector General  
 for Audits and Inspections Office of Inspector General  
 HQ, IG30

The Office of River Protection (ORP) appreciates the opportunity to review the Office of Inspector General's (OIG) draft report, "Inventory Management Practices at Washington River Protection Solutions (WRPS)."

Of concern to ORP is the title of the audit report which leads one to believe that WRPS' entire inventory management was reviewed when, in fact, a narrower scope was conducted. Specifically, WRPS manages approximately \$146 million in inventory, property, and warehousing, to include personal property and spare parts inventory. The OIG audit team limited its review of the WRPS inventory management system to the Material Handling Facilities located in buildings 218A, 2101HV, and 227S. The valuation of this inventory is \$4.6 million and managed under the Tank Farm Material Services System (hereafter referred as Materials System). A more accurate title for the audit would be "Materials System Inventory Management Practices at Washington River Protection Solutions."

ORP concurs with both of the OIG recommendations identified below regarding the contractor's Materials System and has identified a summary of planned actions to remedy the audit findings.

**OIG Recommendation #1:** *ORP Manager shall direct WRPS to take the necessary actions needed to ensure their inventory management system complies with the requirements of FAR 52.245-1, including steps to:*

- a) *Ensure that changes in status of inventory items are inputted accurately and in a timely manner*
- b) *Perform regular physical inventories of all items held in WRPS warehouses*
- c) *Ensure that the status and availability of inventory items are reviewed and updated in a timely manner*

ORP agrees with recommendation #1 based on the requirement that the WRPS Materials System comply with FAR 52.245-1. ORP will issue a letter of direction to WRPS by the end of December 2014 requesting a corrective action plan and detailed target completion dates.

Mr. R. R. Hass  
14-ORP-0127

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DEC 19 2014

WRPS has already completed 5 actions to ensure accountability within the Materials System portion of their inventory management, with another 7 actions to be completed by September 2015.

Actions completed to date:

- 1) employed a material coordinator to ensure inventory management practices are being properly implemented
- 2) employed a temporary warehouseman to ensure proper disposition of work packages and associated inventory
- 3) conducted on-the-job training for both new hires
- 4) requested wireless connectivity to permit use of electronic tablets to record receipt and disposition material within the Material Handling Facilities' Warehouses
- 5) Properly dispositioned work packages in 1 of the 3 warehouses, via the data system, by either excessing the material, placing the material in spare parts, or placing material into short term storage.

Actions to be completed:

- 1) employ another temporary material coordinator to ensure inventory management practices are being properly implemented
- 2) revise WRPS procedure to include requirement for regular reviews of inventories within Materials System
- 3) install wireless connectivity within the Material Handling Facilities
- 4) purchase ruggedized electronic tablets to record receipt and disposition material
- 5) inventory training using electronic tablet hardware/software
- 6) modify one warehouse to secure material in chain link storage cages
- 7) develop and implement a corrective action plan, to include a physical inventory of the WRPS inventory management system in accordance with FAR 52.245-1(f)(1)(iv)

Target Date: Fall of 2015, for completion of remaining WRPS actions.

**OIG Recommendation #2:** *Ensure that Office of River Protection, Contracts & Property Management (CPM) Division, performs regular reviews of WRPS' Materials System to ensure that it complies with FAR requirements.*

ORP agrees with recommendation #2. The ORP CPM will conduct periodic reviews of WRPS' corrective actions leading up to a comprehensive review of the Materials System during the third quarter of FY15. Further, CPM is committed to reviewing the Materials System on an annual basis thereafter. These reviews will be included in ORP's annual assessment plan.

ORP will outline the actions and apprise the OIG of its progress in implementing the recommendations by using the process established in the Departmental Audit Reporting and Tracking System.

Mr. R. R. Hass  
14-ORP-0127

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DEC 19 2014

If you have any questions, please contact me, or your staff may contact JoLynn Garcia, ORP Audit Coordinator at (509) 376-6244.



Kevin W. Smith  
Manager

cc: J. A. Black, IG-323  
D. M. Thomas, IG-323.6  
K. G. Picha, EM-20  
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