



Office of the Inspector General

Audit Report

To the Senior Vice President,
Procurement

REVIEW OF CONTROLS OVER TVA'S INVENTORY WRITE-OFF

Audit Team
Amy R. Rush
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Audit 2005-015F
June 27, 2005



Memorandum from the Office of the Inspector General

June 27, 2005

Paul R. LaPointe, WT 5B-K

**REQUEST FOR MANAGEMENT DECISION – AUDIT 2005-015F – REVIEW OF
CONTROLS OVER TVA'S INVENTORY WRITE-OFF**

Attached is the subject final report for your review and management decision. Your staff's comments have been incorporated in the final report. You are responsible for determining the necessary actions to take in response to our findings. Please advise us of your management decision within 30 days of the date of this report.

Information contained in this report may be subject to public disclosure. Please advise us of any sensitive information in this report which you recommend be withheld.

If you have any questions, please contact Amy R. Rush, Auditor, at (865) 632-2281 or Gregory C. Jaynes, Deputy Assistant Inspector General, Inspections, at (423) 751-7821. We appreciate the courtesy and cooperation of your staff during this review.

Ben R. Wagner
Assistant Inspector General
(Audits and Inspections)
ET 3C-K

ARR:SDB

Attachment

cc (Attachment):

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- A. DETAILED METHODOLOGY
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EXECUTIVE SUMMARY

As part of our fiscal year 2005 audit plan, we performed an audit to assess the adequacy of internal controls related to the (1) identification and reduction of unnecessary and obsolete inventory and (2) financial reporting of the inventory write-offs. Our audit included the controls in place during the period October 1, 2003, to February 13, 2005. During this period, Tennessee Valley Authority (TVA) identified \$13 million of materials to be written off.

The overall controls related to the inventory write-off process mitigate the risk of obsolete, scrap, and surplus materials remaining in inventory. However, the controls related to the identification and reduction of inventory and financial reporting could be improved. In summary, we found:

- The Inventory Management Policy does not (1) address the review of Procurement's Slow Moving Inventory Report, which was one of the key methods used to identify materials for write-off; and (2) define how often the reviews for surplus, scrap, and obsolete materials are to be performed.
- TVA Accounting Practice, Accounting for Materials and Supplies Inventories, does not address the review of write-off monitoring reports by TVA Inventory Accounting, which we conclude is a key control activity being conducted.
- Business unit reviews for surplus/obsolete inventory were being conducted as required. However, surplus/obsolete items were not always identified and written off.
- No signatures were obtained from business units for the approval of inventory write-offs. Approval signatures were required for materials written off after January 10, 2005.
- Inventory purchases were made for the same materials identified as surplus and being held by TVA Investment Recovery. The majority of these purchases could be attributed to automatic requisition items that are not reviewed by Procurement.
- Quarterly inventory reserve calculations were incorrect due to the exclusion of certain spare parts from the total on-hand quantities. Corrective actions have been completed.

In addition to the corrective actions already taken, we recommend the Senior Vice President, Procurement, and the TVA Controller take additional actions, as described in the report, to improve controls related to the identification and write-off of surplus, scrap, and obsolete inventory.

BACKGROUND

As of September 30, 2004, the Tennessee Valley Authority (TVA) had approximately \$290 million in materials and supplies inventory.¹ TVA periodically reviews the inventory by category and usage to determine surplus, obsolete, and/or scrap materials, as defined below:

- Materials that are no longer needed or stocked in excessive quantities are identified as surplus.
- Materials that are no longer usable for its intended purpose are identified as obsolete.
- Materials that cannot be used due to expired shelf life or breakage or items that have no value from a surplus standpoint are determined to be scrap.

For fiscal year (FY) 2004 and to date FY 2005,² TVA identified \$13 million of materials to be written off. TVA Investment Recovery generally disposes of surplus and obsolete items through redeployment, sales, and negotiated transfers. Scrap materials are disposed of as appropriate.

Multiple organizations are involved in identifying and writing off unnecessary and obsolete inventory. TVA business units, including Nuclear, Fossil Power, Transmission/Power Supply, and River System Operations and Environment, are responsible for identifying surplus, obsolete, and/or scrap materials and approving these materials for write-off. The business units identify the materials through reviewing slow moving inventory reports, overmax reports,³ design change notices (DCNs), shelf life expiration dates, and inventory cycle counts. Once the material is identified for write-off:

- Business units communicate to Procurement the materials to be written off.
- Procurement enters key information in the inventory tracking system and handles the initial segregation and disposition of the materials.

In addition, Procurement prepares an inventory obsolescence calculation quarterly for review and approval by Accounting and Performance

¹ For the purpose of this report, the term "materials" refers to materials and supplies inventory only. Our review did not address coal, oil, and tire-based fuel inventories.

² The period of our review is October 1, 2003, through February 13, 2005 (FY 2004 and to date FY 2005).

³ Overmax reports show materials that are above the facility's target maximum amount of materials to keep on hand.

Reporting (APR), TVA Controller. APR also monitors write-off activity and posts adjustments to the general ledger.

OBJECTIVES, SCOPE, AND METHODOLOGY

As part of our FY 2005 audit plan, we performed an audit to assess the adequacy of internal controls related to the (1) identification and reduction of unnecessary and obsolete inventory and (2) financial reporting of the inventory write-offs. The scope of the audit included a review of controls over the inventory write-off process and write-off transactions posted during FY 2004 and to date FY 2005. See Appendix A for detailed methodology.

FINDINGS AND RECOMMENDATIONS

We determined the overall controls related to the inventory write-off process mitigate the risk of obsolete, scrap, and surplus materials remaining in inventory. However, we found the control design and the operating effectiveness of the controls could be improved related to the identification and reduction of surplus, scrap, and obsolete materials. Furthermore, we found the operating effectiveness could be improved related to the financial reporting of the inventory write-offs.

CONTROL DESIGN

With regard to control design, we found the TVA Inventory Management Policy does not specifically address how often reviews for surplus, scrap, or obsolete materials are to be conducted. Also, one of the key methods used to identify materials for write-off, the review of the Procurement Slow Moving Inventory Report, is not specifically addressed in the policy. Other identification methods could also be more clearly defined.

The TVA Accounting Practice, Accounting for Materials and Supplies Inventories, does not reflect review of write-off monitoring reports by TVA Inventory Accounting, which we conclude is a key control activity being conducted.

We recommend the:

- Senior Vice President, Procurement, ensure the Inventory Management Policy specifically (1) states that slow moving inventory reports, overmax reports, and DCNs are reviewed for surplus material; and (2) defines how often reviews for surplus materials are to be conducted.

- TVA Controller ensure that TVA Accounting Practice, Accounting for Materials and Supplies Inventories, accurately reflects monitoring activities being performed by APR.

OPERATING EFFECTIVENESS

Findings and recommendations related to operating effectiveness are contained in Appendix B.

DETAILED METHODOLOGY

As part of our fiscal year (FY) 2005 audit plan, we performed an audit to assess internal controls related to the (1) identification and reduction of unnecessary and obsolete inventory and (2) financial reporting of the inventory write-offs. The scope of the audit included a review of controls over the inventory write-off process and write-off transactions posted during FY 2004 and to date FY 2005.¹

CONTROL DESIGN ADEQUACY

We assessed the adequacy of the control design related to (1) identification and reduction of unnecessary and obsolete inventory and (2) financial reporting of the inventory write-offs by:

- Interviewing employees in various Tennessee Valley Authority (TVA) organizations, including Nuclear, Fossil Power, Transmission/Power Supply, River System Operations and Environment, Procurement, and Accounting and Performance Reporting (APR).
- Reviewing inventory write-off process flowcharts, process descriptions, policies and procedures, and other information provided by Procurement and APR.
- Observing and documenting the inventory write-off process and updating flowcharts and process descriptions to more clearly depict the process.
- Identifying key risks, key control objectives, and key control activities.

OPERATING EFFECTIVENESS OF KEY CONTROL ACTIVITIES

We assessed the operational effectiveness of inventory write-off and financial reporting controls by interviewing applicable TVA employees, reviewing supporting documentation, and reviewing transactions for the period October 1, 2003, through February 13, 2005. Specifically, we:

- Obtained explanations and/or supporting documentation for 59² of the 299,115 catalog identification numbers (CAT IDs)³ that we identified as slow moving items that were not written off.⁴

¹ The period of our review is October 1, 2003, through February 13, 2005 (FY 2004 and to date FY 2005).

² We used attribute sampling methodology to identify sample sizes, and the sample selections were made randomly. Each sample size was based on a 5 percent maximum tolerable error rate and a 5 percent risk of incorrect acceptance.

³ CAT IDs are unique numbers identifying materials in TVA's catalog of materials.

⁴ We compared slow moving reports and write-off reports to obtain the population of 299,115 CAT IDs that were not written off.

- Obtained explanations for why materials were not surplused for 59⁵ of the 14,369 CAT IDs included on Procurement's overmax⁶ reports. We also valued the materials on the overmax report by location and aged the inventory.
- Interviewed nonnuclear design change notice (DCN)⁷ initiators for 30 of the 100 nonnuclear DCNs to determine whether surplus materials were identified.
- Obtained FYs 2003, 2004, and 2005 write-off reports and trended write-offs by location. We obtained explanations for the facilities having the highest dollar amount and number of write-offs.
- Reviewed write-off approval documentation for 59⁸ of the 8,236 CAT IDs included on Procurement's inventory write-off reports.
- Obtained explanations and/or supporting documentation for 50⁹ of the 231 CAT IDs which represented materials that were written off and subsequently purchased.¹⁰ The materials were purchased and not transferred from TVA Investment Recovery.
- Assessed inventory demand and whether materials could be used at other TVA locations by reviewing PassPort¹¹ information for 59¹² of the 8,236 CAT IDs included on Procurement's inventory write-off reports.
- Verified write-offs to the TVA general ledger for 59¹³ of the 8,236 CAT IDs included on Procurement's inventory write-off reports.
- Obtained and reviewed inventory obsolescence calculations to determine if TVA's estimate is reasonable and that adjustments are accurately calculated.

⁵ Ibid; see footnote 2 on page 1.

⁶ Overmax reports show materials that are above the facility's target maximum amount of materials to keep on hand.

⁷ For the review of DCNs, our population was determined based on Stop & Go sampling methodology and not the attribute sampling methodology used in the other sample size selections. We did not review nuclear DCNs because we could not determine the population of the DCNs.

⁸ Ibid; see footnote 2 on page 1.

⁹ Ibid; see footnote 2 on page 1.

¹⁰ We compared FYs 2004 and 2005 purchasing and inventory write-off reports to identify the population of 231 CAT IDs that represented materials purchased after the write-off date.

¹¹ PassPort is a TVA system that supports contracting, ordering, inventory management, and receiving and payment of inventory.

¹² Ibid; see footnote 2 on page 1.

¹³ Ibid; see footnote 2 on page 1.

This audit was performed in accordance with generally accepted government auditing standards. Although we did not test for compliance with laws and regulations, nothing came to our attention during the audit that indicated noncompliance with applicable laws or regulations.

DETAILED OPERATING EFFECTIVENESS

| Control Objective: All surplus, scrap, and obsolete materials are identified by Tennessee Valley Authority (TVA) business units and written off. | | |
|--|--|---|
| Control Activities | Findings | Recommendations |
| Surplus, scrap, and obsolete materials are identified by TVA business units. | <p>The current TVA Inventory Management Policy states, "Material that the facility no longer needs or material stocked in excessive quantities is identified as surplus for use by other locations and subsequent disposition by Investment Recovery. The Inventory Specialist or designee coordinates the review for surplus/obsolete material, including Site Inventory Review Committee (SIRC)¹ review as appropriate, and designates surplus material for a facility with a quantity type of 'SU.'"</p> <p>We determined that reviews for surplus/obsolete material were being performed as required. However, the reviews did not always identify and initiate the write-off surplus items. We reviewed slow moving inventory reports, overmax reports, and design change notices (DCNs) to ensure that surplus items were identified by Procurement and the business units. We found that surplus items were not always identified and written off. Specifically, we found:</p> <ul style="list-style-type: none"> • Three of the 59 catalog identification numbers (CAT IDs) we reviewed that represented materials identified on Procurement's slow-moving inventory reports should have been written off. Procurement personnel informed us that the items would be written off. Specifically, (1) one of the items had no usage within the past five years, (2) another item was over the facility's target maximum of inventory on hand, and (3) the other item was determined as no longer needed.² • Two of the 59 CAT IDs that represented materials on Procurement's overmax reports should have been written off. Procurement personnel informed us that these materials have not been used since PassPort³ came on-line in 2001.⁴ • Two of the 30 DCNs we reviewed did not contain information regarding the identification of surplus/scrap materials; however, we contacted personnel in the business unit and found that surplus/scrap materials were identified during the design change. <p>We also aged the overmax reports by facility and found that 310,858 items totaling \$1.3 million had been in overmax status 4 to 5½ months.</p> | <ol style="list-style-type: none"> 1. The Senior Vice President, Procurement, ensure the reviews accurately identify and initiate the write-off of surplus, scrap, and obsolete inventory. |

¹ The SIRC is a committee composed of Procurement personnel and facility management to address items impacting inventory budgets.

² Procurement stated, "We are reviewing slow moving reports however, due to the size of the reports, the weekly SIRC meetings can only address a few items each week. Therefore, we have to prioritize the lists in order to ensure timely reviews."

³ PassPort is a TVA system that supports contracting, ordering, inventory management, and receiving and payment of inventory.

⁴ Procurement personnel stated that because an item is in overmax status does not necessarily indicate an item should be written off. The plant may have use for the items in later work weeks or outages.

DETAILED OPERATING EFFECTIVENESS

| Control Objective: Only valid materials identified as surplus, scrap, and obsolete are written off. | | |
|---|--|--|
| Control Activities | Findings | Recommendations |
| <p>Surplus, scrap, and obsolete materials to be written off are approved by TVA business units.</p> | <p>Before Procurement can initiate the write-off of surplus, obsolete, or scrap materials, approvals must be obtained from the business units. TVA's Inventory Management Policy prior to January 10, 2005, did not specify that documentation of business unit approvals for inventory write-offs should be maintained. On January 10, 2005, TVA's Inventory Management Policy was revised to state that "The Site Procurement Manager must confirm through documentation and signature that the Business Unit Management authorization has been obtained and ensure that these authorizations are maintained as permanent records."</p> <ul style="list-style-type: none"> • We found that documentation of approvals was not maintained for the 50 CAT IDs in our sample that were written off prior to the January 10, 2005, policy revision. However, we contacted business unit personnel, and they attested to the write-off approval for 43 of the CAT IDs. For the remaining seven CAT IDs, business unit and/or Procurement personnel stated: <ul style="list-style-type: none"> – One could not be verified as approved for write-off because the materials are not normally written off. The business unit personnel believed the material should not have been written off because the represented materials are currently used at the facility. – One was supposed to have been approved for write-off in the SIRC meeting; however, there was no evidence in the meeting minutes the material was brought up for review. – Five were approved verbally, but Procurement could not specifically identify the individual in the business unit who approved the write-off of the material. Therefore, we could not verify the verbal approval. • We found that no authorization signatures were obtained, as required by the policy, for the nine CAT IDs in our sample that were written off after the January 10, 2005, policy revision. Required documentation was maintained for seven of the nine CAT IDs; however, the documentation did not include evidence of approval. | <ol style="list-style-type: none"> 2. The Senior Vice President, Procurement, ensure compliance with TVA's Inventory Management Policy regarding inventory write-off approvals. |

DETAILED OPERATING EFFECTIVENESS

| Control Objective: Only valid materials identified as surplus, scrap, and obsolete are written off. | | |
|---|---|--|
| Control Activities | Findings | Recommendations |
| <p>Surplus materials are identified as being needed by other TVA locations.</p> | <p>We compared fiscal years 2004 and 2005 purchasing and inventory write-off reports and identified a population of 231 CAT IDs that represented purchases made for the same items being held by TVA Investment Recovery. For 29 of the 50 CAT IDs we reviewed, we found that materials could have been obtained from Investment Recovery and used by TVA facilities. Specifically, we found items were written off and subsequently purchased for:</p> <ul style="list-style-type: none"> • Eighteen CAT IDs totaling \$13,500. These CAT IDs were automatic (auto) requisition or blanket purchase order (BPO) items. Requests for auto requisition or BPO materials are electronically sent to the vendor. Procurement personnel do not receive and are not able to review material requests for these items. • Six CAT IDs totaling \$17,996. Procurement personnel informed us the items could not be located at Hartsville⁵ at the time of the purchase. Procurement personnel also stated that one CAT ID totaling \$15,603 was later found in a different location at Hartsville than the one shown in PassPort. • Four CAT IDs totaling \$1,371. Procurement personnel could provide no explanation for why the items were purchased and not transferred. Procurement personnel also informed us that one CAT ID totaling approximately \$300 has since been transferred from Hartsville. • One CAT ID totaling \$550. Procurement personnel stated the facility needed more of the material than what was located at Hartsville; therefore, they ordered the material instead of transferring it. <p>For the remaining 21 CAT IDs we reviewed totaling \$63,052, we found the materials were not transferred for valid reasons including expired shelf life, flood damage, and materials ordered prior to when they showed up at Hartsville.</p> <p>We also assessed inventory demand and whether inventory could be used at other TVA locations by reviewing PassPort information for 59 CAT IDs included on Procurement's inventory write-off reports. We found no instances where the materials could be used at other locations.</p> | <p>3. The Senior Vice President, Procurement, consider implementing additional controls to ensure that available surplus materials are utilized before materials are purchased and/or reemphasize the importance of transferring items from Investment Recovery before purchasing.</p> |

⁵ TVA's Hartsville facility contains warehouses that hold surplus materials received by TVA's Investment Recovery.

DETAILED OPERATING EFFECTIVENESS

| Control Objective: Write-off transactions are accurately entered and processed. | | |
|--|---|-----------------|
| Control Activities | Findings | Recommendations |
| PassPort automatically debits the reserve and credits the inventory account when inventory is written off. | We reviewed 59 CAT IDs to determine if inventory on Procurement's inventory write-off report was accurately recorded on TVA's general ledger. We found the write-off for the materials represented by the 59 CAT IDs was accurately posted to the general ledger. | None. |

DETAILED OPERATING EFFECTIVENESS

| Control Objective: Inventory write-off allowance calculations are reasonable, and adjustments are accurately calculated. | | |
|--|---|-----------------|
| Control Activities | Findings | Recommendations |
| <p>Inventory reserves (obsolescence) must be established in accordance with written policy and Generally Accepted Accounting Principles. The reserves must be reviewed quarterly for accuracy and reasonableness and adjusted accordingly.</p> | <p>The TVA Accounting Practice, Accounting for Materials and Supplies Inventories, states that Procurement is responsible for reviewing materials on a quarterly basis for obsolescence. A probability factor for obsolescence is assigned based on the type of material⁶ and historical usage data. The potential write-off allowance is adjusted quarterly for current inventory obsolescence.</p> <p>Procurement prepares the inventory obsolescence calculation for Chief Financial Officer's (CFO) review and approval. To obtain the potential inventory available for write-off, Procurement obtains TVA's total quantity of material on hand less certain critical spares.⁷ A probability factor is then assigned to the potential available inventory to obtain the total potential write-off for that quarter.</p> <p>We found that Procurement's calculation of potential inventory available for write-off removed certain critical spares that were not included in the total quantity on hand. This calculation error caused the total potential write-off amount for each quarter to be greater than the amount provided to the CFO. The calculations were approved by Accounting and Performance Reporting.</p> <p>The calculation error caused the quarterly adjustment to the inventory allowance account to be incorrect. Specifically, we noted:</p> <ul style="list-style-type: none"> • The December 2003 adjustment was (\$3.538M) and should have been (\$3.765M); a difference of (\$227,321). • The March 2004 adjustment was (\$2.351M) and should have been (\$2.574M); a difference of (\$222,698). • The June 2004 adjustment was \$2.052M and should have been \$1.814M; a difference of (\$238,000). • The September 2004 adjustment was (\$7.818M) and should have been (\$8.049M); a difference of (\$230,650). • The December 2004 adjustment was (\$3.920M) and should have been (\$4.229M); a difference of (\$309,001). <p>The Manager of Inventory Accounting stated that based on our review the issue has been corrected with Procurement, and the quarterly adjustment is now correct.</p> | <p>None.</p> |

⁶ The different types of material are critical spares, spares, and consumables/bulk commodities.

⁷ These items are critical spares that are not likely to be written off, such as storm restoration materials or turbines.