



**Memorandum from the Office of the Inspector General**

April 15, 2020

Laura J. Campbell  
Diane T. Wear

**REQUEST FOR FINAL ACTION – AUDIT 2019-15666 – MAXIMO VENDOR MASTER FILE**

Attached is the subject final report for your review and final action. Your written comments, which addressed your management decision and actions planned or taken, have been included in the report. Please notify us when final action is complete. In accordance with the Inspector General Act of 1978, as amended, the Office of the Inspector General is required to report to Congress semiannually regarding audits that remain unresolved after 6 months from the date of report issuance.

If you have any questions or wish to discuss our findings, please contact Chasity W. Scantling, Senior Auditor, at (865) 633-7358 or Rick C. Underwood, Director, Financial and Operational Audits, at (423) 785-4824. We appreciate the courtesy and cooperation received from your staff during the audit.

A handwritten signature in black ink that reads "David P. Wheeler".

David P. Wheeler  
Assistant Inspector General  
(Audits and Evaluations)

CWS:KDS

Attachment

cc (Attachment):

TVA Board of Directors  
M. Scott Fugate  
Jennifer A. Johnson  
Jeffrey J. Lyash  
Justin C. Maierhofer  
Jill M. Matthews  
Sherry A. Quirk  
Michael D. Skaggs  
John M. Thomas III  
Gabriel A. Trotter  
Heather S. Young  
OIG File No. 2019-15666



Office of the Inspector General

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# *Audit Report*

To the Vice President, Supply Chain,  
and to the Vice President and  
Controller, Corporate Accounting

# **MAXIMO VENDOR MASTER FILE**

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Audit Team  
Chasity W. Scantling  
Ala H. Young

Audit 2019-15666  
April 15, 2020

## **ABBREVIATIONS**

ACFE	Association of Certified Fraud Examiners
AICPA	American Institute of Certified Public Accountants
DBA	Doing Business As
DS	Disbursement Services
ID	Identification Number
IOFM	Institute of Finance and Management
IOMA	Institute of Management and Administration
SC	Supply Chain
SPP	Standard Programs and Processes
TVA	Tennessee Valley Authority

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MEMORANDUM DATED APRIL 6, 2020, FROM LAURA CAMPBELL AND  
DIANE WEAR TO DAVID P. WHEELER



# Audit 2019-15666 – Maximo Vendor Master File

## EXECUTIVE SUMMARY

### Why the OIG Did This Audit

The Tennessee Valley Authority's (TVA) Supply Chain (SC), Asset Management and Performance group manages the supplier maintenance process and maintains vendor records electronically in the Maximo system. According to TVA Disbursement Services, in fiscal year 2019, TVA processed \$6.9 billion in payments through Maximo. We included an audit of TVA's Maximo vendor master file in our annual audit plan due to the risk of improper payments associated with the large amount of payments processed annually using Maximo data.

Our audit objective was to determine if TVA's Maximo vendor master file is properly maintained according to best practices and SC Standard Programs and Processes (SPP) 04.014, *Supplier Maintenance*. Our audit scope included the data in TVA's Maximo vendor master file as of November 20, 2019.

### What the OIG Found

We performed data analysis of the Maximo vendor master file to determine if it was maintained in accordance with SC-SPP-04.014 and the best practices identified during the audit. We found no significant instances of noncompliance with TVA's SPP, but did note that best practices were not consistently followed for maintenance of the vendor master file.

Specifically, we found (1) Maximo does not log changes to the vendor master file, (2) instances where vendor addresses match employee addresses, (3) duplicate vendors, (4) vendors are not deactivated in a timely manner, (5) no minimum requirements for vendor record data, and (6) vendors with no physical address.

### What the OIG Recommends

We recommend TVA's Vice President, SC, take the following actions:

1. Review Maximo functionality to determine if the capability exists to capture vendor status changes. If so, this logging function should be enabled and logs reviewed periodically.
2. Update SC-SPP-04.014, *Supplier Maintenance*, to incorporate best practices, including:
  - a. Periodic analyses of all changes made to the vendor master file.



## Audit 2019-15666 – Maximo Vendor Master File

### EXECUTIVE SUMMARY

- b. Regular analyses comparing employee addresses to the vendor master file.
- c. A fixed interval cleanup of duplicate vendors, inactive vendors, and active vendors without payment activity for more than two years.
- d. Clear standards in accordance with best practices identifying minimum information necessary for addition of new vendors.
- e. Require a physical address be included in vendor information for all SC vendors.

#### **TVA Management's Comments**

Supply Chain and Corporate Accounting management agreed with the recommendations to review Maximo functionality to determine if the capability exists to capture vendor status changes and update SC-SPP-04.014 to incorporate best practices as identified. See the Appendix for TVA management's complete response.

## **BACKGROUND**

The Tennessee Valley Authority's (TVA) Supply Chain (SC), Asset Management and Performance group, manages the supplier maintenance process and maintains vendor records electronically in the Maximo system. TVA's vendor master file included 45,508 vendors as of November 20, 2019. Of the 45,508 vendors:

- 16,844 (37 percent) were active, which includes vendors with a status in Maximo of active, pending expelled, or watchlist.<sup>1</sup>
- 28,664 (63 percent) were inactive, which includes vendors with a status in Maximo of inactive or expelled.

A company's vendor master file is the repository of a considerable amount of information about a company's suppliers, which are used for the payment of supplier invoices and the issuance of purchase orders. Vendor master file maintenance includes the creation of new supplier records and the modifying of existing records. TVA's SC Standard Programs and Processes (SPP) 04.014, *Supplier Maintenance*, details the business processes to be followed in managing records about the companies, agencies, or business entities to which TVA makes payments. During our audit, TVA SC management informed us they were in the process of updating this SPP and would be waiting to finalize the update to the SPP until our audit was completed.

Data in the vendor master file is used to carry out the most common type of fraud against organizations and therefore carries inherent risks. According to the Association of Certified Fraud Examiners<sup>2</sup> (ACFE), fraud schemes in which an employee steals or misuses the employing organization's resources are by far the most common, occurring in 89 percent of cases reported by the ACFE. These include fraudulent disbursement schemes in which a person causes his or her employer to issue a payment by submitting invoices for fictitious goods or services, inflated invoices, or invoices for personal purchases. The median loss from these cases was \$114,000.

Several professional organizations provide guidance for vendor master file maintenance, including the ACFE, the American Institute of Certified Public

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<sup>1</sup> Maximo field definitions state, *pendexplld* status means the vendor will be expelled when open invoices are paid and *watchlist* status means the vendor is listed on SC watch list and proper approvals must be obtained. Per SC and Disbursement Services (DS) personnel, the *inactive* status means the vendor has not had any active transactions in 5 years and the *expelled* status means TVA cannot do business with the vendor.

<sup>2</sup> According to the ACFE, it is the world's largest anti-fraud organization and premier provider of anti-fraud training and education.

Accountants<sup>3</sup> (AICPA), the Institute of Finance and Management<sup>4</sup> (IOFM), and the Institute of Management and Administration<sup>5</sup> (IOMA). We reviewed guidance from these organizations to identify best practices for maintenance of vendor master files. At least two of the professional organizations mentioned above identified each of the attributes shown below as a best practice or an indicator of increased risk:

- Each vendor should have only one entry in the master vendor file.
- Vendor addresses that match employee addresses are red flags for improper activity.
- Minimum requirements for vendor information should be established to effectively set up vendors.
- Vendors with no physical address can be an indicator of billing schemes.
- The master vendor file should be cleansed at a minimum once a year, although many best practice companies perform this task quarterly. The job should include deactivating vendors that have not been in use in the last 12 months.
- System access and activity logs are core internal controls for accounts payable.

In fiscal year 2019, TVA processed \$6.9 billion in payments through Maximo for SC contracts, purchase power agreements, and gas purchases. We included an audit of TVA's Maximo vendor master file in our annual audit plan due to the risk of improper payments associated with the volume of payments processed annually using Maximo data.

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<sup>3</sup> The AICPA states it is the world's largest member association representing the accounting profession, with more than 431,000 members, and a history of serving the public interest since 1887. The AICPA sets ethical standards for the profession and U.S. auditing standards for private companies, nonprofit organizations, federal, state, and local governments.

<sup>4</sup> According to the IOFM it is recognized as the leading organization in providing training, education, and certification programs specifically for professionals in accounts payable, procure-to-pay, accounts receivable, and order-to-cash, as well as key tax and compliance resources for global and shared services professionals, controllers, and their finance and administration teams.

<sup>5</sup> Business Wire stated "the IOMA offers high quality management information products for business professionals."

## **OBJECTIVE, SCOPE, AND METHODOLOGY**

The objective of our audit was to determine if TVA's Maximo vendor master file is properly maintained according to best practices and SC-SPP-04.014, *Supplier Maintenance*. The scope included the data in TVA's Maximo vendor master file as of November 20, 2019.

To achieve our audit objective, we:

- Reviewed SC-SPP-04.014, *Supplier Maintenance*, and TVA-SPP-13.009, *Accounts Payable Process*, to identify procedures related to vendor file maintenance.
- Interviewed TVA SC and DS personnel and reviewed program documentation to gain an understanding of TVA's process for maintaining the Maximo vendor master file.
- Compared TVA's current processes for maintaining the Maximo vendor master file to best practices identified by the AICPA, ACFE, IFOM, and IOMA.
- Obtained the Maximo vendor master file as of November 20, 2019, and performed data analysis to assess the reliability of the data.
- Obtained TVA payment data for current vendors in the Maximo vendor master file for the period January 1, 2015, through January 13, 2020, to review vendor payment activity.
- Obtained vendor addresses from the Maximo vendor master file and employee addresses from TVA's human resource information system to determine if any vendor and employee addresses matched.
- Performed analytical reviews of the vendor master file data to identify duplicate vendors, active vendors without payments, and inactive vendors with payments.
- Performed analysis of vendor information in the vendor master file to determine if data requested on the vendor setup form was consistently entered for each vendor.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require 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 objectives.

## **FINDINGS**

We performed data analysis of the Maximo vendor master file to determine if it was maintained in accordance with SC-SPP-04.014 and the best practices identified in the Background section above. We found no significant instances of noncompliance with TVA's SPP, but did note that best practices were not consistently followed for maintenance of the vendor master file. Specifically, (1) Maximo does not log changes to the vendor master file, (2) instances where vendor addresses match employee addresses, (3) duplicate vendors, (4) vendors are not deactivated in a timely manner, (5) no minimum requirements for vendor record data, and (6) vendors with no physical address.

### **MAXIMO DOES NOT LOG CHANGES TO THE VENDOR MASTER FILE**

We attempted to identify inactive vendors that have received payments. However, TVA DS personnel informed us Maximo does not have the capability to capture the exact date the vendor became inactive. In addition, TVA SC personnel informed us that Maximo will not allow payments to process when a vendor's status is inactive, but once a record is inactive in Maximo, the record can still be edited and changed to active for various reasons. We were informed no logs are maintained for any of this activity.

The ACFE, IOMA, and IOFM all noted the importance of activity logging. IOFM noted it can play a crucial role in monitoring core accounts payable internal controls. According to IOMA, reports should be generated regularly that detail all changes made to the vendor master file during a given time period that include the names of the persons both requesting and authorizing the change and the date the changes were made. They go on to state, "in all cases companies should have the ability to generate reporting detailing changes made to the vendor master file whenever needed." IOMA identified having no review process of the changes made to entries in the vendor master file as a worst practice.

### **MAXIMO VENDOR MASTER FILE CONTAINS VENDOR ADDRESSES THAT MATCH EMPLOYEE ADDRESSES**

We found 2,414 vendor addresses in the Maximo vendor master file that match employee addresses from TVA's human resource system. We determined 907 of those included active vendor to employee address matches. Of the 907 active vendor to employee address matches, 93 matched to active employees and 814 were terminated employees. According to TVA SC and DS personnel, the Maximo vendor master file includes employees who have returned to TVA as contractors and employees who receive reimbursements, settlements, and garnishments. TVA SPPs do not address reviewing vendor addresses to determine if they match an employee address.

Both the AICPA and ACFE identify vendor addresses that match employee addresses in the vendor master file as red flags for improper activity. According to the ACFE, part of vendor management involves ensuring that vendors are legitimate business enterprises. An article in the *Journal of Accountancy*<sup>6</sup> noted, “a match between vendors’ addresses and addresses of employees could indicate a billing scheme.” The ACFE suggests, organizations can identify red flags of billing schemes by matching the vendor master file to the employee master file on various key fields, such as address.

## **DUPLICATE VENDORS IN THE MAXIMO VENDOR MASTER FILE**

We noted 157 duplicate records where vendors had the same name, tax identification number (ID), and address but were assigned different company numbers. We also identified 63 duplicate vendors based on inconsistent data entry related to company name only. For instance, we noted differences in punctuation in company names (i.e., Company A LLC. and Company A LLC). This increases the risk of duplicate payments.

SC-SPP-04.014 states multiple records for the same vendor are acceptable when a vendor has the same name, tax ID, and a different address. In these cases vendor records are to be differentiated by assigning a different company number.

Both the AICPA and IOMA noted each vendor should have only one entry in the master vendor file. IOMA stated,

Each vendor should have only one entry in the master vendor file. When a vendor has several, the door is swung wide open for duplicate payments. If stringent controls are not set around the master vendor file setup and/or the files are never purged, multiple entries for the same account will ensue. Duplicate payments are not the only potential problem. Multiple entries in the master vendor file open the door for unscrupulous employees to commit fraud.<sup>7</sup>

## **VENDORS ARE NOT DEACTIVATED IN A TIMELY MANNER**

As noted in the Background section above, the vendor master file contained 16,844 active and 28,664 inactive vendors as of November 20, 2019. We reviewed payment data for all vendors from January 1, 2015, to January 13, 2020, and noted 13,697 vendors (13,582 active and 115 inactive) have received payments in the past five years (see Table 1 on the following page). According to TVA SC personnel, Maximo vendors are automatically deactivated (status changed to “Inactive”) after 5 years of inactivity.

<sup>6</sup> Kim Nilsen, “Keeping Fraud in the Cross Hairs,” *Journal of Accountancy*, June 1, 2010, <<https://www.journalofaccountancy.com/issues/2010/jun/20102852.html>>, accessed on February 14, 2020.

<sup>7</sup> Mary S. Schaeffer, *Accounts Payable Best Practices*, John Wiley and Sons Ltd, New Jersey, 2004, pp. 79, 82.

Vendor Status as of November 20, 2019				
Time Since Last Payment	Active		Inactive	
	Vendors	% of Vendors	Vendors	% of Vendors
Less than 2 years	2,662	19.6%	15	13.0%
2 - 3 years	6,782	49.9%	16	13.9%
3 - 4 years	2,245	16.5%	30	26.1%
4 - 5 years	1,829	13.5%	54	47.0%
More than 5 years	64	0.5%	0	0.0%
<b>Totals</b>	<b>13,582</b>	<b>100.0%</b>	<b>115</b>	<b>100.0%</b>

Table 1

Of the active vendors with payment activity, 10,920 (80 percent) did not have payment activity within the last two years. In addition, we noted there are over 28,000 inactive vendors that have remained in the vendor master file although they have not had payment activity in the last five years.

According to the AICPA, IOFM, and IOMA, cleansing the master vendor file should, at a minimum, be done once a year, although many best practice companies perform this task quarterly. The job should include deactivating vendors that have not been in use in the last 12 months. The ACFE suggests a well-rounded approach to vendor management begins with a “thorough scrubbing” of an organization’s master list. According to IOFM, “unscrupulous employees can easily change banking information on inactive records to send payments to themselves.” If system logs of changes to vendor records are not maintained, such changes can go unnoticed.

## NO MINIMUM REQUIREMENTS FOR VENDOR RECORD DATA

The AICPA states minimum requirements for vendor information should be established to effectively set-up vendors. SC-SPP-04.014, *Supplier Maintenance*, requires TVA Form 17300 – *TVA Vendor Information/Electronic Records*, to be used for new vendor setup. This form asks for company name, tax ID, street address, country, city, state, zip code, telephone number, fax number, contact name, and e-mail address.<sup>8</sup> However, the SPP does not require that all fields be completed before a new vendor can be established. In addition, the Maximo system does not require that these fields be completed prior to vendor creation.

We found inconsistencies in the information collected for vendors. As shown in Table 2 on the following page, of the 16,844 active vendors in the Maximo vendor master file, we found numerous vendors were missing information in one or more of the fields requested during new vendor setup.

<sup>8</sup> According to SC-SPP-04.014, TVA Form 17300 is not required for the following supplier types: economic development, manufacturer only, revenue only. If the supplier is one of these types, the requestor provides the following in an e-mail to the SC, Operations Support group: company name, address, telephone number, tax ID (if available).

Blank Fields by Field Name	
Field Name	Number of Records*
Address	380
Remittance Address	384
Telephone Number	3,631
Tax ID <sup>9</sup>	3,109
Contact Name	6,386
Remittance Contact	6,764
* 7,139 vendors were missing information in one or more of these fields.	

Table 2

## VENDORS ARE NOT REQUIRED TO HAVE A PHYSICAL ADDRESS IN MAXIMO

We identified 2,697 active vendors for which a post office box was the only form of address in the vendor master file. Of these, 28 were economic development vendors for which the address field is populated with “For Economic Development Only” and 122 were doing business as (DBA) vendors for which the address field is populated with “DBA” only. SC-SPP-04.014, *Supplier Maintenance*, does not require vendors have a physical address, and TVA Form 17300 allows the use of a post office box for remittance purposes. In addition, SC-SPP-04.014, *Supplier Maintenance*, states requests for economic development vendors should include company name, address, telephone number, and tax ID (if available). However, according to TVA SC personnel, economic development and DBA vendors may not have a valid address in the address field.

According to both the AICPA and ACFE, use of vendors that do not have a physical address should be prohibited. The ACFE noted this could indicate a shell company scheme.

## RECOMMENDATIONS

We recommend TVA’s Vice President, SC, take the following actions:

1. Review Maximo functionality to determine if the capability exists to capture vendor status changes. If so, this logging function should be enabled and logs reviewed periodically.

**TVA Management’s Comments** – TVA management agreed with the recommendation to review Maximo functionality to determine if the capability exists to capture vendor status changes. See the Appendix for TVA management’s complete response.

<sup>9</sup> Foreign vendors were not included in this number because TVA personnel informed us they may not have a Tax ID.

2. Update SC-SPP-04.014, *Supplier Maintenance*, to incorporate best practices, including:
  - a. Periodic analyses of all changes made to the vendor master file.
  - b. Regular analyses comparing employee addresses to the vendor master file.
  - c. A fixed interval cleanup of duplicate vendors, inactive vendors, and active vendors without payment activity for more than two years.
  - d. Clear standards in accordance with best practices identifying minimum information necessary for addition of new vendors.
  - e. Require a physical address be included in vendor information for all SC vendors.

**TVA Management's Comments** – TVA management agreed with the recommendation to update SC-SPP-04.014 to incorporate best practices as identified. See the Appendix for TVA management's complete response.

**TVA RESTRICTED INFORMATION**

APRIL 6, 2020

David P. Wheeler, ET 3C-K

RESPONSE TO REQUEST FOR COMMENTS - DRAFT AUDIT 2019-15666 - MAXIMO  
VENDOR MASTER FILE

Reference: Memorandum dated March 16, 2020

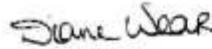
This is in response to your March 16, 2020, draft audit report on Maximo Vendor Master File. Supply Chain and Corporate Accounting leadership appreciate the opportunity to review and respond to the evaluation of the Maximo Vendor Master File process.

Supply Chain and Corporate Accounting have reviewed Draft Audit 2019-15635 and agree with the recommendations to review Maximo functionality to determine if the capability exists to capture vendor status changes and update SC-SPP-04.014 to incorporate best practices as identified.

We would like to thank Chasity Scantling and Rick Underwood for their professionalism in reviewing this process and providing the report and recommendations. If you have further questions, please contact, Heather Young, Supply Chain Program Manager, at 865-632-3886.



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Vice President  
Supply Chain  
BR 5A-C



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