



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

September 7, 2017

James R. Dalrymple, MR 3H-C  
Laura A. Green, BR 5A-C

**REQUEST FOR FINAL ACTION – EVALUATION 2016-15435 – TRANSMISSION AND  
POWER SUPPLY DIRECT CHARGE MATERIALS**

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 evaluations 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 Kristin S. Leach, Senior Auditor, at (423) 785-4818 or E. David Willis, Director, Evaluations, at (865) 633-7376. We appreciate the courtesy and cooperation received from your staff during the evaluation.

David P. Wheeler  
Assistant Inspector General  
(Audits and Evaluations)  
ET 3C-K

DDS:FAJ  
Attachment  
cc (Attachment):

TVA Board of Directors  
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OIG File No. 2016-15435



Office of the Inspector General

# *Evaluation Report*

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To the Senior Vice President,  
Transmission and Power Supply; and  
Vice President, Supply Chain

## **TRANSMISSION AND POWER SUPPLY DIRECT CHARGE MATERIALS**

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Evaluation Team  
Kristin S. Leach

Evaluation 2016-15435  
September 7, 2017

## **ABBREVIATIONS**

MSDC	Muscle Shoals Distribution Center
SPP	Standard Programs and Processes
TPS	Transmission and Power Supply
TVA	Tennessee Valley Authority

## **SYNOPSIS**

During an evaluation we performed of Hydro Generation Obsolete Equipment, concerns were identified related to the length of time Transmission and Power Supply (TPS) direct charge materials had been stored at the Muscle Shoals Distribution Center (MSDC). Due to these concerns, we initiated an evaluation to determine if TPS direct charge materials were being managed appropriately.

In summary, we determined TPS direct charge materials were not being managed appropriately because: (1) direct charge materials were not purchased in accordance with the Tennessee Valley Authority (TVA) policy, (2) TPS does not keep track of direct charge materials stored at MSDC, and (3) direct charge materials are being stored at MSDC even though the work orders for which they were purchased have closed.<sup>1</sup> Inappropriately managing TPS direct charge materials could increase the risk of loss, theft, or the over purchase of materials. In addition, project costs could be overstated and funds spent on items that go unused.

We recommend the:

- Senior Vice President, Transmission and Power Supply, develop a formal tracking process for TPS direct charge material.
- Vice President, Supply Chain, enforce the requirements for buying materials using the direct charge method or update the policies to reflect actual practices.

TVA management generally agreed with the recommendations. See the Appendix for TVA management's complete response.

## **BACKGROUND**

TVA Standard Programs and Processes (SPP) 13.008, Accounting for Materials and Supplies Inventories, states that a direct charge material is an "Item to be purchased for a specific job defined by account number and expensed directly upon receipt of material. Material initially is charged to an inventory account specifically established for direct charge material, by location, then immediately charged out."

TVA-SPP-04.021, TVA Inventory Management Process, provides the following guidance on what can be purchased by direct charge:

- One-Time Purchases – If material is for immediate use (within 60 days) and not held in Material Management control and/or stored at or near point of installation.

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<sup>1</sup> For the purposes of this report closed indicates work orders were canceled or construction was completed.

- Material Bought for Projects
  - Major projects (i.e., unit restart, selective catalytic reduction system, and scrubber) if a separate project location code is established and other means of inventory control are utilized. Usually these projects have large unique components and are expected to be one-time purchases and usually described by extensive engineering drawings.
  - TPS substation construction and new-line construction material delivered direct to the project.
- Emergency and Same-Day Needs – Materials are to be issued immediately upon receipt.

During an evaluation we performed of Hydro Generation Obsolete Equipment,<sup>2</sup> concerns were identified related to the length of time TPS direct charge materials had been stored at the MSDC. Due to these concerns, we initiated an evaluation of TPS direct charge materials.

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

The objective of this evaluation was to determine if TPS direct charge materials were being managed appropriately. The scope of our review was limited to TPS direct charge materials located at MSDC between September 2016 and March 2017. To achieve our objective, we:

- Reviewed TVA-SPP-13.008, Accounting for Materials and Supplies Inventories; and TVA-SPP-04.021, TVA Inventory Management Process, to determine how TPS direct charge materials should be managed.
- Interviewed TPS and Supply Chain personnel to determine how TPS purchases and manages direct charge materials.
- Visited MSDC in October 2016 and March 2017 to observe materials designated as direct charge and determine how the materials are managed at the site.
- Obtained copies of spreadsheets maintained by Supply Chain that listed the direct charge material inventories being stored at MSDC during September 2016 and January 2017.
  - The list from September 2016 included 468 line items of material that cost approximately \$18 million. (The \$18 million cost was for 441 of the line items. We could not determine the cost for the remaining 27.)
  - The list from January 2017 included 373 line items of material with a cost of at least \$14.9 million. (The \$14.9 million cost was for 360 of the line items. We could not determine the cost for the remaining 13 items.)

As discussed later in our report, we did not determine the accuracy or completeness of the spreadsheets maintained by Supply Chain.

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<sup>2</sup> Evaluation 2015-15265, Hydro Generation Obsolete Equipment, July 24, 2015.

- Obtained a list of direct charge materials held at MSDC that TPS identified as being “stranded” because the projects had been closed. The list, which was provided by TPS in January 2017, indicated 53 line items were stranded. We determined: (1) 51 of the 53 line items were included in the September 2016 list, and (2) 48 of the 53 line items were included in the January 2017 list.
- Selected a nonstatistical random sample of 33 of the remaining 325 (373 less 48 identified by TPS as being stranded) direct charge line items from the January 2017 list to determine if any additional direct charge items were stranded. We did not identify additional stranded items based on our review of the 33 items.
- Obtained a revised list of items identified by TPS as being stranded in March 2017. TPS informed us it had revised its list of items identified as stranded to exclude items that still had an active work order status in Maximo.<sup>3</sup> The revised list lowered the stranded items from 53 to 35 line items that had a total cost of approximately \$607,000. (Thirty of the items from the revised stranded list were on Supply Chain’s January spreadsheet list, at a cost of approximately \$515,600.)
- Compared the cost from TPS’s summary of stranded items to Maximo data to verify the accuracy of the cost.
- Determined whether the direct charge materials kept at MSDC met the requirements of SPP-04.021, TVA Inventory Management Process, for purchasing direct charge materials.

This evaluation was performed in accordance with the Council of the Inspectors General on Integrity and Efficiency’s *Quality Standards for Inspection and Evaluation*.

## **FINDINGS**

We determined TPS direct charge materials were not being managed appropriately because: (1) direct charge materials were not purchased in accordance with TVA policy, (2) TPS does not keep track of direct charge materials stored at MSDC, and (3) direct charge materials are being stored at MSDC even though the work orders for which they were purchased have closed.

### **TPS DIRECT CHARGE MATERIALS NOT IN ACCORDANCE WITH TVA POLICY**

TVA-SPP-04.021, TVA Inventory Management Process, provides guidance for what material can be purchased as a direct charge item. The guidance includes (1) one-time purchases of material being purchased for immediate use (within 60 days) and is stored at or near point of installation, and (2) projects such as major projects and TPS substation construction and new-line construction material

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<sup>3</sup> TVA’s supply chain and work management system. For materials and supplies, it supports contracting, ordering, inventory management, receiving, and payments.

delivered direct to the project. We determined TPS was not in compliance with TVA's policy because 224 of the direct charge line items that had a cost of \$11.7 million on Supply Chain's January 13, 2017, spreadsheet list had been stored at MSDC for more than 60 days. Additionally, none of the materials stored at MSDC were for major projects (as defined by TVA-SPP-04.021) or delivered directly to TPS projects, which indicates the materials did not meet the criteria for being a direct charge item.

According to TPS personnel, Supply Chain makes the determination if material should be purchased through inventory or direct charged to projects. Supply Chain personnel informed us that this practice is different from other organizations within TVA where work management personnel (such as coordinators, schedulers, or business support representatives) make decisions on how material should be purchased.

### **TPS DOES NOT KEEP TRACK OF DIRECT CHARGE MATERIALS STORED AT MSDC**

TPS does not have a formal method of keeping track of direct charge materials being stored at MSDC. Supply Chain personnel at MSDC have been attempting to keep track of the materials by updating a spreadsheet kept on an internal SharePoint Web site. Although TPS owns the material, TPS personnel acknowledged that the spreadsheet maintained by Supply Chain personnel at MSDC is the only method they have to show what TPS direct charge material is located at the site. However, this method of tracking TPS direct charge materials is ineffective because the spreadsheet is not updated on a routine, consistent basis.

During our evaluation, TPS and Supply Chain reviewed and updated the spreadsheet listing of TPS direct charge materials being stored at MSDC. The review, which was conducted in fall 2016, identified instances where direct charge materials on the September 2016 spreadsheet were no longer onsite and instances where materials that were onsite had not been added to the spreadsheet. After TPS and Supply Chain completed their review, the number of direct charge line items was changed from 468 in September 2016 (totaling approximately \$18 million) to 373 in January 2017.

Although we did not determine the accuracy of the spreadsheet listings being maintained by Supply Chain, the completeness of the spreadsheet list is questionable since it is only updated periodically. Furthermore, during our site visit to MSDC in March 2017, two direct charge line items that were included on the January spreadsheet could not be located. TVA personnel subsequently determined one of the items, had been shipped out to a project. We were informed by TPS and MSDC personnel the other line item was lost.

## STRANDED ITEMS STORED AT MSDC

After we started our evaluation, TPS conducted a review of direct charge line items held at MSDC and identified 53 line items they considered to be stranded because their associated project work orders were closed or construction was complete. TPS subsequently revised their stranded list to 35 line items by eliminating items that had an active work order status, although each of the 18 line items eliminated had a construction complete or in-service date. The 35 stranded items had been received at the MSDC between 2014 and 2016 and had a combined cost of approximately \$607,000.<sup>4</sup> TVA informed us the 35 items would be dispositioned as follows:

- Three line items valued at \$387,863 reallocated to another project.
- Nine line items valued at \$112,094 shipped to TVA sites for use.
- Fifteen line items valued at \$99,146 to be put into inventory.
- Seven line items valued at \$7,911 to be surplus.
- One line item valued at \$463 was lost.

According to TPS and Supply Chain personnel, possible reasons for direct charge materials being stranded included: (1) materials may have been ordered more than once, and (2) design changes may have occurred after materials were ordered.

Although TPS's revised list indicated \$607,000 of materials at MSDC were stranded,<sup>5</sup> the actual value of stranded materials stored at MSDC was higher because TPS excluded work orders that had an active status. All of the 18 line items removed from TPS's original stranded list had work orders that indicated construction was complete and/or the project had an in-service date (5 line items had a construction complete date prior to January 2016 and 2 had an in-service date in 2014).<sup>6</sup> TPS personnel acknowledged that the further from the construction complete date, the more likely the material would be stranded.

Inappropriately managing TPS direct charge materials could increase the risk of loss, theft, or the over purchase of materials. In addition, project costs could be overstated and funds spent on items that go unused.

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<sup>4</sup> One item did not have a received date listed. Also, TPS estimated 1 line item's cost based on a similar purchase because it was purchased prior to implementation of Maximo.

<sup>5</sup> Only 30 of the 35 items from TPS's revised stranded list were on Supply Chain's January spreadsheet list, at a cost of approximately \$515,600.

<sup>6</sup> The in-service date usually occurs after the construction complete date, and it is the date at which the asset is available for a specifically assigned function.



## **RECOMMENDATIONS**

We recommend the Senior Vice President, Transmission and Power Supply, develop a formal tracking process for TPS direct charge materials.

We recommend the Vice President, Supply Chain, enforce the requirements for buying materials using the direct charge method or update the policies to reflect actual practices.

**TVA Management's Comments** – TVA management generally agreed with the recommendations and stated they will (1) develop a formal process to track direct charge materials more accurately, and (2) update existing procedures and policies to reflect current business practices while incorporating process improvements identified.

See the Appendix for TVA management's complete response.

August 31, 2017

David P. Wheeler, ET 3C-K

REFERENCE FINAL REPORT – EVALUATION 2016-15435 – TRANSMISSION & POWER  
SUPPLY DIRECT CHARGE MATERIALS

This memo is in response to the August 3, 2017, Memorandum from the Office of the Inspector General, Request for Comments - Draft Evaluation 2016-15435 - Transmission & Power Supply Direct Charge Materials. We thank the OIG for their thorough evaluation of our practices regarding direct charge materials.

This memorandum makes the following recommendations:

1. *OIG recommends the Senior Vice President, Transmission & Power Supply, develop a formal tracking process for TPS direct charge materials.*
2. *OIG recommends the Vice President, Supply Chain, enforce the requirements for buying materials using the direct charge method or update the policies to reflect actual practices.*

Regarding Recommendation 1, Transmission & Power Supply agrees that performance could be improved in this area and commits to development of a formal process to track direct charge materials more accurately. There are several contributing factors to current state with opportunities to improve existing performance. These include adjusting the timing of when material is ordered for capital projects and improving the coordination between project schedules and Maximo when project timelines are revised. Evaluations are in progress for both these areas.

Regarding Recommendation 2, Transmission & Power Supply and Supply Chain are committed to working together to update existing procedures and policies to reflect current business practices while incorporating process improvements identified as outcomes from Recommendation 1.

The actions and evaluations stated above will be part of CR 1333772. Thank you again for the detailed review by your audit team and the associated recommendations. If you have any questions regarding this response, please contact Randal Petty, General Manager Transmission Project Services, at 423-751-7673.



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August 31, 2017

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