



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

AUDIT REPORT

The Department of Energy's Energy
Information Technology Services Federal
Support Costs

DOE-OIG-16-12

May 2016



Department of Energy
Washington, DC 20585

May 2, 2016

MEMORANDUM FOR THE SECRETARY

A handwritten signature in blue ink, appearing to read "Rickey R. Hass".

FROM: Rickey R. Hass
Acting Inspector General

SUBJECT: INFORMATION: Audit Report on "The Department of Energy's
Energy Information Technology Services Federal Support Costs"

BACKGROUND

The Department of Energy's Energy Information Technology Services (EITS) shared services program, formerly known as the Department of Energy's Common Operating Environment, was based, in part, on a Secretarial initiative to implement a single, integrated information technology (IT) infrastructure across the Department's Federal environment. In an effort to increase efficiency and purchasing power and reduce overall expenditures, the Chief Information Officer was tasked with consolidating Federal IT support services and providing standard desktop, electronic mail, and related services. At the time of our review, EITS provided shared services to approximately 9,000 users across the Department at a cost of approximately \$158 million for fiscal years (FYs) 2013 and 2014.

The attached report presents the results of an audit of the Department's EITS shared services program. The Office of Inspector General contracted the independent public accounting firm of KPMG LLP (KPMG) to conduct an audit to determine whether EITS Federal support costs were reasonable and were managed effectively.

RESULTS OF AUDIT

Although KPMG was unable to conclude whether the EITS Federal support costs were reasonable, KPMG found that EITS officials had not always managed costs effectively. In particular, KPMG identified numerous weaknesses related to the cost recovery of services from EITS customers. In addition, problems related to the structure of the EITS cost model existed, including failure of officials to identify the total cost of operations or the cost per user. KPMG also identified several opportunities to improve the quality of services provided by EITS. Specifically, the results of the audit indicated that:

- EITS officials had not fully recovered the cost of shared services from its customers. For instance, the EITS program only recovered 79 percent of costs incurred in FY 2014 from user programs. Furthermore, the transparency of a number of the EITS invoices

reviewed was not adequate, and costs were aggregated at too high a level when compared to other invoice items. In some instances, costs for items greater than \$3 million did not include details to describe the nature of the costs.

- EITS officials used direct appropriation funds to pay for invoices that EITS customer billings should have recovered. For example, even though EITS paid approximately \$20 million to vendors based on services consumed, officials only recovered about \$13 million from customers in the first quarter of FY 2014, a recovery rate of only 65 percent.
- EITS management had not developed a current program strategy to manage the participation of the EITS shared services program. Specifically, EITS officials had not determined the amount of participation needed to maximize cost efficiencies and had not developed program participation documentation, dashboards, reports, or targets.
- The Department had not identified the total costs of EITS operations or costs per user, resulting in weaknesses in the EITS cost model. Specifically, officials had not included all associated costs for managing and delivering Federal IT support services into its cost documents or billing application. For example, EITS cost documentation did not track costs for data center management, Federal personnel supporting EITS services, cybersecurity, and other divisions that perform work that benefits the EITS shared services program.
- Opportunities for improvement existed to enhance the quality of EITS service. For example, test work at three locations found that EITS closed end user service incident tickets even though the issues were not always resolved. In addition, EITS shared service customers did not always receive bills in a timely manner, and bills did not contain the level of detail needed for a thorough analysis.

A number of issues related to cost recovery, management of the EITS cost model, and service quality contributed to the identified weaknesses. For example, KPMG found:

- EITS prices for various services remained static and EITS officials had not updated prices in at least 4 years, resulting in less than full recovery of costs from customers. In addition, program officials had not fully defined cost recovery goals for EITS or developed and implemented a process or system to track and report current, historic, or forecasted cost recovery. Furthermore, EITS officials did not have contract data details that outlined other direct cost spending in the invoices for the contracts.
- EITS managers used direct appropriation funds, in part, because of (1) the timing of invoices received from the supplier and payments received from customers, (2) the impact of Congressional continuing resolutions on customers' ability to pay at the beginning of the fiscal year, and (3) delinquent payments from customers. In addition, KPMG found that the lack of a participation goal for cost recovery was due to outdated metrics developed by the program in 2003.

- EITS cost model problems related to cost identification occurred because officials had not implemented a system or technology to effectively model the operational costs or cost per user based on service consumption. For instance, officials used an outdated manual process to collect, validate, merge, link, track, and model costs. In addition, reporting was completed manually and on an ad hoc basis.
- A lack of clear processes, definitions, and training to resolve service incidents contributed to weaknesses in EITS service quality, including unresolved closed service tickets. In addition, KPMG noted that problems with timely customer billing occurred because of the lack of a documented process or agreement with customers regarding billing specifics.

KPMG also observed a number of positive aspects regarding management of the EITS program. Specifically, KPMG did not find any evidence that non-participating Headquarters or field entities were obtaining benefits from EITS provided services without cost reimbursement. In addition, KPMG found that the Department periodically evaluated the efficiency and effectiveness of EITS operations to help ensure successful management of the program. KPMG noted that the Department incorporated operational efficiencies to help lower EITS per user costs. Furthermore, the EITS shared services program had a well-structured technology services catalog that defined many areas, including services offered, roles and responsibilities, service levels, customer transition strategy, billing rates, and directions for requesting technology services.

Although these are positive actions, without improvements the Department may be unable to ensure that the EITS program is managed effectively, ensuring that the costs of services provided are appropriately identified, the quality of services provided to customers are maximized, and the costs of services are fully recovered. Therefore, KPMG made recommendations in the report that, if fully implemented, should assist the Department with improving its EITS shared service program.

MANAGEMENT RESPONSE

Management concurred with the report's recommendations and indicated that corrective actions had been initiated or completed to address the issues identified in the report. Management's comments and our response are summarized in the body of the report. Management's formal comments are included in their entirety in Appendix C.

PERFORMANCE AUDIT

KPMG conducted this performance audit in accordance with generally accepted Government auditing standards issued by the Comptroller General of the United States and the Department's Office of Inspector General Audit Manual, as appropriate. Generally accepted Government auditing standards require that KPMG plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for the findings and conclusions based on the audit objective.

The Office of Inspector General monitored the progress of the audit and reviewed the report and related documentation. Our review disclosed no instances in which KPMG did not comply, in all material respects, with the audit requirements. KPMG is responsible for the attached report dated April 29, 2016, and the conclusions expressed in the report.

Attachment

cc: Deputy Secretary
Administrator, National Nuclear Security Administration
Under Secretary for Science and Energy
Deputy Under Secretary for Management and Performance
Chief of Staff
Chief Information Officer

PERFORMANCE AUDIT OF THE
DEPARTMENT OF ENERGY'S
ENERGY INFORMATION TECHNOLOGY SERVICES
FEDERAL SUPPORT COSTS

Prepared for:

U.S. Department of Energy
Office of Inspector General

As of Date:

April 29, 2016

KPMG LLP
1801 K Street, NW
Washington, DC 20006

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EXECUTIVE SUMMARY

April 29, 2016

Mr. Rickey R. Hass
Acting Inspector General
Office of Inspector General
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. Hass:

This report presents the results of work conducted by KPMG LLP to address the performance audit objectives of the Department of Energy's (Department) Energy Information Technology Services (EITS) Federal support costs. We conducted our test work during the period of April 1, 2015, through July 31, 2015, and our results are as of September 8, 2015.

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 based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our results.

The audit objective was to determine whether the Department's EITS Federal information technology (IT) support costs were reasonable and were managed effectively.

As our report describes, we did not identify any findings or issues that individually, or in aggregate, would lead to the conclusion that the EITS Federal IT support costs were not reasonable. However, we were unable to conclude that the EITS Federal IT support costs were reasonable due to the lack of an established and fully comprehensive EITS IT shared service cost model that allowed comparison of EITS cost metrics to industry peers. In addition, while we noted several areas in which the EITS shared service program was well managed, we also identified multiple areas where the EITS Federal IT shared services program could be improved. In particular, we identified that EITS did not recover the full cost of shared services from customers or track the historic cost recovery. In addition, EITS officials had not identified the total cost of operations or the cost per user. We also identified several opportunities to improve the quality of services provided by EITS.

Improvements in these areas may not only increase the effectiveness and efficiency of the program but may also improve efforts to evaluate the performance of the program objectively.



Attachment

Therefore, we made a number of recommendations throughout the report that, if fully implemented, should help the Department improve management of the EITS program.

Sincerely,

KPMG LLP

GLOSSARY

TERM	DEFINITION
AG	Audit Goal
AO	Audit Objective
Call	Refers to a telephone call to the service desk from a user. A call could result in an incident or service request being logged.
CIO	Chief Information Officer
Direct Allocation	Fund type to cover Energy Information Technology Services' own information technology bill (Energy Information Technology Services receives a bill for its own service just like any other customer), a bench engineering team that triages all project requests and, as the budget permits, funds projects to advance the infrastructure and environment for all customers.
DOE-COE	Department of Energy's Common Operating Environment
EBR	Energy Information Technology Services Billing Report
EERE	Office of Energy Efficiency and Renewable Energy
EITS	Energy Information Technology Services
EITS Bill	Fund type used directly for services and support directly related to Energy Information Technology Services shared services and the cost is forwarded on to Energy Information Technology Services customers.
EITS FM	Energy Information Technology Services Financial Management
ExCITE	Extended Common Integrated Technology Environment
FY	Fiscal Year
GAGAS	Generally Accepted Government Auditing Standards
Incident	An unplanned interruption to an information technology service.
IT	Information Technology
ITFM	Information Technology Financial Management
NETL	National Energy Technology Laboratory
NNSA	National Nuclear Security Administration

OCIO	Office of the Chief Information Officer
SLA	Service Level Agreements
Service Request	A formal request from a user to receive goods, assistance, or repairs. For example, a password reset, a request for information, or a request to install or update a workstation.
Ticket	Used to track incidents and service requests as defined.
WBS	Work Breakdown Structure
Working Capital Fund	Fund type including direct pass-through costs not supporting Energy Information Technology Services operations or customer services. Customers prepay the budgeted services associated with the Working Capital Fund before receiving service. These funds are internally transferred and have no impact on Energy Information Technology Services customers or provided services.

DETAILS OF FINDINGS

The Department of Energy's (Department) Energy Information Technology Services (EITS), formerly known as the Extended Common Integrated Technology Environment (ExCITE) and the Department of Energy's Common Operating Environment (DOE-COE), was based largely on a Secretarial initiative to implement a single, integrated information technology (IT) infrastructure across the Department's Federal environment. In an effort to increase efficiency and purchasing power and to reduce overall expenditures, the Chief Information Officer (CIO) was tasked with consolidating Federal IT support services and providing standard desktop, electronic mail, and related services. At the time of our review, EITS provided shared IT support services to approximately 9,000 users across the Department, with a total combined cost for fiscal years (FY) 2013 and 2014 of approximately \$158 million.

The objective of this KPMG LLP audit was to determine whether EITS Federal support costs were reasonable and were managed effectively. We reviewed EITS shared service costs for FYs 2013 and 2014 only. Complete FY 2015 costs were not available due to the timing of the performance audit. However, in some instances, we used a portion of FY 2015 available costs in our analysis.

The report is broken into four sections that address the observations and findings associated with the audit objectives:

- (1) Positive Observations,
- (2) Cost Recovery of Services,
- (3) Cost Model, and
- (4) Service Quality.

Although we noted several areas in which the EITS Federal shared services program was well managed, we also identified multiple areas where the EITS IT shared services program could be improved. In particular, we noted that EITS did not recover the full cost of shared services from customers or track the historic cost recovery. In addition, EITS officials had not identified the total cost of operations or the cost per user. We also identified several opportunities to improve the quality of services provided by EITS.

POSITIVE OBSERVATIONS

We observed a number of positive aspects related to management of the EITS program. Specifically, during the audit, we noted the following:

- Based on our review of documentation and discussions with EITS management, customers, and non-customers, we did not find any evidence that non-participating Headquarters or field entities were obtaining benefits from EITS provided services without cost reimbursement.
- The Department periodically evaluated the efficiency and effectiveness of EITS operations to help ensure effective management of the program. Specifically, EITS

management completed a self-assessment of the efficiency and effectiveness of EITS operations through documentation on lessons learned, incident management, change requests, request fulfillments, and operation service level targets, as well as user surveys, risk registers, monthly operations service level agreement (SLA) reports, and service level performance summaries.

- The Department incorporated operational efficiencies to help lower EITS per user costs. For instance, the Department used operational performance reports to help track incorporated operational efficiencies and lower EITS per user costs. In addition, the Office of the Chief Information Officer (OCIO) used performance reports for July 2013 through May 2015 to track key performance indicators for all of the prime contracts. Using information in the reports, the Quality Manager tracked deviations and developed corrective actions to remediate any issues.
- The EITS shared services program had a well-structured technology services catalog that defined the services, service components, roles and responsibilities, service levels, customer transition strategy, and billing rates, as well as provided directions on how to request the technology services.

While these were positive actions, more work is necessary to ensure EITS Federal support costs are reasonable and effectively managed. Therefore, we have made recommendations throughout the report that, if fully implemented, should help the Department improve its EITS shared service program.

COST RECOVERY OF SERVICES

EITS did not recover the full cost of shared services from customers or track the historic cost recovery. In addition, the transparency of some of the EITS costs was not adequate and the costs were aggregated at too high a level when compared to other invoice items. We also found that EITS Financial Management (FM) officials used their own direct appropriation funds to pay for invoices that customer funding should have recovered. Furthermore, EITS management had not developed a current programmatic strategy to manage the participation of the EITS shared service program.

Incomplete Cost Recovery

Based on our review of documentation and discussions with EITS FM officials, we found that EITS had not recovered the full cost of shared services from its customers. In addition, EITS officials did not track or report the historic cost recovery. Absent such cost history data, we aggregated the costs associated with direct appropriations and EITS billing funding types¹ for FYs 2013 and 2014 to determine the recovery rates. After analysis, we determined that the total cost recovery was 103 percent in FY 2013 and 79 percent in FY 2014. Although full cost

¹ EITS uses four primary types of funding categories to cover operational costs. The Glossary provides a definition for each funding type. We excluded costs associated with reorganization and Working Capital Fund types because those costs were directly allotted to specific pre-designated work and did not affect, either positively or negatively, the cost of EITS operations.

information was not available for FY 2015 at the time of our review, officials expected the cost of managing EITS would increase and there were no plans to increase the rates charged to customers.

Based on test work and discussions with EITS FM officials, we determined that the issues previously identified occurred, in part, due to the following:

- EITS prices for various services remained static and had not been updated. While our test work indicated that prices had not been updated in at least 4 years, officials noted that prices had not changed since the program's inception in 2001. For instance, prices charged to EITS customers for desktop services (hardware and software), cybersecurity, and voice, video, and data services had not changed in several years even though the cost of the services may have increased. In addition, EITS officials were unable to provide the methodology used to develop the rates charged to customers.
- Program officials had not defined cost recovery goals for EITS. While one OCIO official stated that a 100 percent recovery rate was the target, there was no formal documentation to support the assertion.
- EITS FM officials had not developed and implemented a process or system to track and/or report current, historic, or forecasted cost recovery.
- The costs of IT services have continued to rise, driven mostly by an increase in contract full-time equivalent positions to support EITS. For instance, officials commented that increases in labor costs caused the vast majority of cost increases. However, we determined that EITS officials had not incorporated the increased costs into the rates charged to customers to ensure that EITS fully recovered all costs.

Without improvements and in light of current trends, the deficit caused by not recovering EITS costs will continue to widen as the costs of managing the EITS shared services program increase in future years and recovery rates remain static.

Subsequent to our audit work, an official indicated that EITS FM officials took steps to address the incomplete cost recovery. Specifically, the official stated that they developed a new cost model to achieve 100 percent cost recovery, and they sent bills to the customers for FY 2016 with the new recoverable rates. However, we did not validate that EITS FM officials effectively implemented the new process.

Invoice Cost Transparency

We found that the transparency of several EITS invoices reviewed was not adequate and the costs were aggregated at too high a level when compared to other invoice items. Specifically, during the review of EITS costs, we observed that there was no cost type provided for approximately 25 percent of FY 2014 spending. For example, single line items for large dollar amounts existed without any detail describing the nature of the costs, including two contracts that had single line items greater than \$3 million.

Based on our inquiries and testing results, we found that EITS officials did not have contract data details that outlined other direct cost spending in the contract invoices. In addition, officials had not developed an automated process to connect the line items on the listed contracts to spending amounts. Rather, officials used a manual process where contract personnel matched contract spending against other direct IT cost reports and transferred the resulting information to the cost document.

Invoices aggregated at too high a level decrease spending transparency. In addition, EITS FM officials used considerable time reconciling the transactions against additional documents to determine how much funding was spent, how much funding remained, what associated service the transaction supported, and which customers were required to pay the costs. As a result, the manual processes employed reduced the efficiency of operations and the effectiveness of EITS costing.

Mixing of Funding Types

Contrary to the goals of the program, we found that EITS officials used direct appropriation funds to pay for invoices that were budgeted through EITS customer billings.² For example, even though EITS paid approximately \$20 million to vendors based on services consumed, officials only recovered about \$13 million from customers in the first quarter of FY 2014, a recovery rate of only 65 percent. We noted similar discrepancies during other periods in FY 2014. EITS management informed KPMG that this discrepancy between funds received and funds paid possibly occurred because EITS paid vendors from its own directly allocated funds rather than using funds collected from the customers that received the IT services during that period.

Based on our test work and discussions with EITS FM officials, we determined that the previously identified weaknesses occurred, in part, because of (1) the timing of invoices received from the supplier and payments received from customers, (2) the impact of Congressional continuing resolutions on customers' ability to pay at the beginning of the fiscal year, and (3) delinquent payments from customers. The disparate timing of both spending and recovery created instances where EITS FM officials had to use other direct funds to cover the invoices that customers should have paid.

Using direct appropriation funding to pay for invoices that EITS customers should have paid decreases financial transparency, financial forecasting, and the availability of direct appropriation funds for their intended purposes. In addition, enhanced tracking of fund transfers could increase management efficiency by allowing EITS officials to manage and use their own resources as budgeted. When EITS has to cover the financial cost of running the program, officials are unable to spend resources to grow or transform the program through additional efficiencies of scale and operation. The cyclical nature of EITS recovery of services significantly affects efficiency. Enhanced tracking of fund types increases the predictability of

² During FYs 2013 and 2014, EITS FM officials used four primary types of funding including Direct Appropriation, EITS Bill, Reorganization Costs, and the Working Capital Fund.

spend and cost modelling. Predictability increases management efficiency by allowing management to focus time and effort on improving the program.

Shared Service Customer Goal

EITS management had not developed a current program strategy to manage the participation of the EITS shared services program. Specifically, EITS officials had not determined the amount of participation needed to maximize cost efficiency and had not developed program participation documentation, dashboards, reports, or targets. For example, management had not completed a study to determine which organizations were not receiving any services, and it had not approached potential customers to determine if there were services that EITS could provide those organizations. In addition, management did not conduct any high-level reviews to determine what economies of scales could be available given additional customers for different services.

Based on our test work, we determined that the lack of a participation goal was due to outdated metrics developed by the program in 2003. The original program, ExCITE, had a participation goal of approximately 10,000 users. However, the user goal had been established before the tenure of current EITS management, and officials commented that they did not have knowledge of how the current supporting participation metrics originated.

The lack of an EITS customer participation goal reduces management's ability to affect operational efficiencies that reduce the cost of services to customers and the total overall cost per user. Moreover, EITS may realize additional economies of scale and cost savings for some services as the number of users increases.

COST RECOVERY OF SERVICES RECOMMENDATIONS

We recommend that the CIO direct the Deputy CIO for Enterprise Operations and Shared Services and the Deputy CIO for Resource Management to:

1. Refine the IT billing process, to include:
 - a. Updating the service prices on a regular basis and setting the price of services at a level that meets the organization's recovery strategy; and
 - b. Developing a process to track and forecast cost recovery.
2. Enhance other direct costs tracking in the EITS contracts, to include:
 - a. Developing an automated process to better track spending of other direct cost items on large contract work orders; and
 - b. Establishing an invoice dollar threshold that triggers additional detailed review.

3. Manage disparate timing for both spending and recovery by developing a strategy for early fiscal year billing that emphasizes executing budgeted cost types and working with customers to receive notifications of potential funding delinquencies; and
4. Establish an EITS shared services customer target by:
 - a. Performing a study to determine if additional economies of scales are available;
 - b. Developing a program participation strategy that addresses the customer targets; and
 - c. Setting up periodic management checkpoints to track and manage the status of reaching the new targets, if applicable.

COST MODEL

EITS FM officials had not identified the total costs of operations or costs per user. Specifically, officials had not included all associated costs for managing and delivering Federal IT support services into its cost documents or billing application. For example, costs for data center management, Federal personnel supporting EITS services, cybersecurity, and other OCIO divisions that perform work that benefits the EITS shared services program were not managed or tracked in EITS cost documentation.

Problems with identifying costs occurred because EITS FM officials had not implemented an electronic system to effectively model the operational costs or cost per user based on service consumption. We noted the following:

- EITS FM officials used an outdated manual process to collect, validate, merge, link, track, and model costs. In addition, officials completed reporting manually and on an ad hoc basis. For requests from management and other reporting needs, officials had to modify a cost document manually to generate reports. While the cost document included invoice details for each month, officials tracked the costs using multiple cost types and Work Breakdown Structure (WBS) categories and classifications, some of which were well formed but were used inconsistently from year to year. We also found there was no data repository to maintain historical costs or model allocation or other logic.
- EITS FM officials used a separate application, the EITS Billing Report (EBR), to bill services to customers. The EBR application used the consumption counts of services from the invoices and rate cards to develop the costs charged to the customer. Although the cost model and billing model used the same cost information, each used a different WBS and the models were not linked together.
- Invoices were not linked to a system of record such as the Department's Standard Accounting and Reporting System or the Strategic Integrated Procurement Enterprise System. As a result, transparency of spending was decreased and the effort required by EITS FM officials to monitor and track spending was substantially increased. In

response to our audit, management commented that it had developed new processes to identify cost categories for obligations and that invoices would be paid from those obligations based on customer billing levels.

- Although the EBR application had a documented process to illustrate the technology, people, and steps required to generate the EITS customer bills, we found that neither the cost nor billing models tracked the timing of other direct cost initial requests, the acquisition and payment of costs, asset delivery, or payment from the customer. Subsequent to our test work, management indicated that they had defined and were developing a process to better track spending of all other direct cost items.

The lack of an effective and robust IT cost model linked to actual service consumption by customers can have negative effects, including possibly overcharging or undercharging customers. Without an effective cost model, EITS FM officials were unable to identify the exact cost of delivery and were unable to collect fees to offset operational costs in full. In addition, the lack of an IT cost model linked to actual service consumption decreased customer service consumption and billing transparency. Billings did not show service consumption, which created a lack of transparency because customers did not have visibility into which services they were paying each month. The decreased transparency into actual costs also hindered management's ability to raise rates charged to customers to offset the cost of operations. Furthermore, the lack of an IT cost model linked to actual service consumption reduced EITS management's ability to monitor, predict, and change patterns of activities to best maximize their ability to know and meet the needs of their customers.

COST MODEL RECOMMENDATIONS

We recommend that the CIO direct the Deputy CIO for Enterprise Operations and Shared Services and the Deputy CIO for Resource Management to:

5. Develop an IT cost model that correlates costs to services provided by EITS, tracks allocation decisions, and maintains historical records, and that has the capability to track budget to execution variance and forecasting abilities.
6. Integrate the cost model with the IT service management system to link it directly to end user IT consumption, thereby enhancing transparency and accuracy of customer bills.
7. Integrate cost types and WBS with cost management tools to:
 - a. Define a crosswalk to both internal and external management and reporting requirements; and
 - b. Develop transparent and easy to understand cost types and WBS codes that are available to all program management and customer organizations.

SERVICE QUALITY

We identified several opportunities to improve the quality of services provided by EITS. In particular, numerous EITS customers reported that incident tickets were closed before the issues were resolved. In addition, EITS shared service customers did not always receive bills in a timely manner, and bills did not contain the level of detail needed for thorough analysis.

Ticket Closure without Resolution

We found that EITS customers experienced multiple occurrences of service incident tickets that were closed before the service issues were resolved. For instance, during test work at the National Nuclear Security Administration's (NNSA) Albuquerque Field Site and the Office of Energy Efficiency and Renewable Energy's (EERE) Golden Field Office, several end users discussed issues concerning the closing of incident tickets without resolution, which then required requesting new tickets for previously reported issues. Unresolved tickets were closed regardless of whether service was requested by calling the service desk or by submitting service tickets through the service management system. Although we were unable to determine the total number of unresolved ticket closures, the Albuquerque Field Site and Golden Field Office officials discussed multiple occurrences reported by their end users.

Based on our test work, we determined that the identified weaknesses occurred because of a lack of clear definitions, specific processes, and dedicated training for resolving service incidents. In addition, end user customers did not have the ability to reopen tickets. Customers we spoke with commented that having unresolved tickets closed was very frustrating and negatively affected the overall perception of IT service quality. In addition, multiple attempts to address the same issue created additional work for the service desk, end users, IT points of contact at the customer's site, customer account managers, and management, thereby impacting the overall efficiency of the organization and increasing costs. Furthermore, duplicative calls inflated the number of incidents and decreased the cost per incident metrics, thus reducing the accuracy and transparency of operations to EITS management and customers.

Customer Billing Transparency and Frequency

EITS shared service customers did not always receive bills in a timely manner. Although EERE management received monthly bills, we noted that Office of Science (Science) and National Energy Technology Laboratory (NETL) management received bills less frequently. In addition, EITS shared service customers did not receive bills at the level of detail needed for a thorough analysis. Science, NETL, and EERE officials told us that the invoices were at too high of a level for them to review the detailed spending, and/or the information was not provided in a format conducive to an effective review. To the credit of EITS, its customers repeatedly highlighted that individuals within EITS were very responsive to customer billing requests. We consistently received positive comments about customer interactions with EITS FM officials and other OCIO personnel when customers requested billing clarifications and adjustments.

Issues with untimely billing occurred, in part, because of the lack of a documented process or agreement with customers for customer billing. Officials had not established a billing process that included due dates or additional charges for non-payment of invoices. In addition, the lack of clarity in the EITS billing process occurred because EITS FM officials sent customer reports to other OCIO organizations for consolidation with other customer bills. The OCIO organizations used the reports to create files manually before sending them to the customer, which in turn caused reduced transparency in bills. Management commented that, following our test work, they developed a new process to improve management of customer funding.

Billing for services that are summarized at too high of a level for customers causes additional work by customers, EITS IT finance, and IT customer account managers. The additional time required to get details on the billing increases the time between transaction and transaction reconciliation, thus increasing the chances of billing errors and the likelihood of charge reversals.

SERVICE QUALITY RECOMMENDATIONS

We recommend that the CIO direct the Deputy CIO for Enterprise Operations and Shared Services and the Deputy CIO for Resource Management to:

8. Enhance EITS service management by:
 - a. Tracking and monitoring resolution progress through IT customer account managers and IT points of contact;
 - b. Developing and implementing effective processes and training for resolving customer IT incidents; and
 - c. Configuring the service management system to send an email to end users when a ticket is closed providing a link that allows users to reopen incidents without issuing a new ticket if their original ticket was not completely resolved.
9. Implement improvements to the customer billing process by:
 - a. Documenting the billing process to include, as part of the customer agreement, the expectations of bill timing and the sources from which to obtain the bill; and
 - b. Updating the customer bill to illustrate, at a minimum, the name of the service, the unit cost of the service provided, the units of service consumed, and the resulting aggregate costs for those services.

MANAGEMENT RESPONSE

Management concurred with the report's recommendations and indicated that corrective actions had been initiated or completed to address the issues identified in the report. For instance, management commented that it completed a review of all available funding for provisioning

commodity IT to the Department and worked to ensure full cost recovery of EITS services moving forward. In addition, the OCIO noted that it initiated a project to expand current capabilities of an existing system to automatically track all other direct cost requests, as necessary. Management also commented that the Department developed a new funding process and, once implemented, would require customers to pay on or ahead of costs incurred. Furthermore, management indicated that new financial reporting entity codes were developed as part of the new funding process that will allow for better identification and understanding of the EITS charges.

AUDITOR RESPONSE

Management's comments and planned corrective actions are responsive to our recommendations. Management's comments are included in Appendix C.

APPENDIX A: PERFORMANCE AUDIT GOALS AND OBJECTIVES

The performance audit goals (AG) itemize the high-level objectives necessary to evaluate the performance of the Energy Information Technology Services (EITS) Federal information technology (IT) support costs to determine whether those costs were reasonable and effectively managed. We used the following performance AGs:

- AG-1. Determine cost effectiveness,
- AG-2. Determine effectiveness of cost recovery,
- AG-3. Determine service leakage,
- AG-4. Determine whether EITS operations are evaluated for effectiveness and efficiency,
- AG-5. Ascertain quality of EITS provided services, and
- AG-6. Analyze EITS shared service program coverage.

To support the overall AGs, the Office of Inspector General developed a series of specific performance audit objectives (AO). KPMG tested the AOs by performing a comprehensive review of the EITS shared services. The audit approach focused on the complete set of services provided by EITS, the costs of providing the services, the recovery of costs from service customers, and the quality of the provided services. We reviewed the people, processes, and technology supporting the services, cost, and quality of services for the EITS shared service program. The AOs detail the steps required to support the performance measurement of the AGs listed above. The AOs included:

- AO-1. Complete analyses of EITS costs, including total costs for operations and costs per user;
- AO-2. Determine whether the Department is recovering the correct amount of costs from users of EITS services or subsidizing costs for users;
- AO-3. Determine whether non-participating Headquarters and Department field entities are obtaining benefits from EITS provided services without cost reimbursement;
- AO-4. Determine whether the Department has evaluated the efficiency of EITS operations;
- AO-5. Determine whether the Department has incorporated operational efficiencies to help lower EITS per user costs;
- AO-6. Determine whether the Department has evaluated the effectiveness of EITS operations;

AO-7. Determine whether the quality of EITS provided services meet user needs as well as contract specifications and agreements between EITS and Department programs; and

AO-8. Determine whether EITS shared service program participation has met expected levels and, if not, the reason for the deficiency.

Table 2 summarizes the observations and findings for the audit objectives and report sections. There was some overlap between the areas of the report, resulting in findings that span more than one report section.

TABLE 2: REPORT SECTION AND AUDIT FINDING CROSSWALK

REPORT SECTION	FINDING	AUDIT OBJECTIVE
GENERAL OBSERVATIONS		AO-3. Determine whether non-participating Headquarters and Department field entities are obtaining benefits from EITS provided services without cost reimbursement. AO-4. Determine whether the Department has evaluated the efficiency of EITS operations. AO-5. Determine whether the Department has incorporated operational efficiencies to help lower EITS per user costs. AO-6. Determine whether the Department has evaluated the effectiveness of EITS operations.
COST RECOVERY OF SERVICES	(1) Incomplete Cost Recovery (2) Invoice Cost Transparency (3) Mixing of Fund Types (4) Shared Service Customer Goals	AO-1. Complete analyses of EITS costs, including total costs for operations and costs per user. AO-2. Determine whether the Department is recovering the correct amount of costs from users of EITS services or subsidizing costs for users AO-8. Determine whether EITS shared service program participation has met expected levels and, if not, the reasons for the deficiency.
COST MODEL	(5) Manual IT Service Costing	AO-1. Complete analyses of EITS costs, including total costs for operations and costs per user.
SERVICE QUALITY	(6) Ticket Closure without Resolution (7) Customer Billing Transparency and Frequency	AO-7. Determine whether the quality of EITS provided services meet user needs as well as contract specifications and agreements between EITS and Department programs.

APPENDIX B: SCOPE AND METHODOLOGY

The audit scope was limited to evaluating the services and related costs to determine whether Energy Information Technology Services (EITS) Federal information technology (IT) support costs were reasonable and were managed effectively. The review of IT shared service costs and quality included site test work with EITS management in addition to site test work with both EITS service customers and non-customers. The Office of Inspector General selected EITS customer and non-customer groups to represent a mix of customers and non-customers by type, location, size, and scope of IT services consumed.

The audit work was conducted from April 2015 to July 2015 at Department of Energy (Department) Headquarters in Washington, DC, and Germantown, Maryland; National Nuclear Security Administration's Albuquerque Complex in Albuquerque, New Mexico; National Energy Technology Laboratory in Pittsburgh, Pennsylvania, and Morgantown, West Virginia; and Golden Field Office in Golden, Colorado. We reviewed EITS shared service costs for the complete periods of fiscal years (FYs) 2013 and 2014. Complete FY 2015 costs were not available at the time of the audit and thus were not included in the review. However, in certain circumstances, partial FY 2015 costs were used to support test work for specific audit objectives or test procedures. We reviewed EITS shared service quality for the complete periods of FYs 2013 and 2014, in addition to the partial period of FY 2015 starting from October 2014 through April 2015.

All procedures were performed in accordance with performance audit standards as defined in generally accepted Government auditing standards (GAGAS). In accordance with GAGAS, the report communicates the results of the performance audit and includes relevant observations and recommendations. If applicable, the report includes: (1) deficiencies in internal controls that are significant within the context of the objectives of the performance audit, (2) any instances of fraud or potential illegal acts, unless they are inconsequential within the context of the audit objectives, (3) significant violations of provisions of contracts and grant agreements, and (4) significant abuse detected because of this engagement.

To support the performance audit, we made specific inquiries of management, as well as requested and reviewed documentary evidence about the audit objectives. The responses to our inquiries, the written representations, and the results of audit procedures, among other things, comprise the evidential matter that was relied upon to determine the appropriate findings, conclusions, and recommendations contained in the audit report. We assessed the Department's implementation of the *GPR Modernization Act of 2010* and determined that it had established limited performance measures for its EITS program. We relied on limited computer-processed data to accomplish our audit objectives and determined the data was sufficiently reliable for the purposes of our audit by validating the results through discussions with management and reviews of supporting documentation.

In accordance with GAGAS, we reviewed the background and results of previous Department and EITS audits and relevant studies. Specifically, we reviewed program participation, non-participation, service unit costs, and benchmark comparisons from the previous work against the test work from this performance audit. The previous audits reviewed were *The Department's*

Efforts to Implement Common Information Technology Services at Headquarters (DOE/IG-0763, March 2007) and *The Office of Science's Management of Information Technology Resources* (DOE/IG-0831, November 2009). We also reviewed the Gartner *Department of Energy – 120 Day Study: Customer Satisfaction Analysis Report* (March 2014).

Guidance used in developing the scope of our work plan is contained in the following documents:

- The *Clinger-Cohen Act of 1996* (February 1996).
- The *Federal Information Technology Acquisition Reform Act* (March 2013).
- The Office of Management and Budget's *Federal Financial Management Improvement Act* (September 1996).
- The Office of Management and Budget's *Circular A-130, Revised: Management of Federal Information Resources* (November 2000).
- The Office of Management and Budget's *Memorandum M-10-32: Evaluating Programs for Efficacy and Cost Efficiency* (July 2010).

The Federal Government did not provide guidance or criteria for the audit of an IT shared services program. In addition, our research could not identify any definitive Federal guidance or criteria for developing, implementing, or maintaining an IT shared service cost model. To conduct this performance audit, we used a combination of leading practices and commercial guidance to perform the test work. Based on discussions with EITS management, we determined that EITS used the *Information Technology Infrastructure Library v3* (2011 Revision) framework for IT service management. Therefore, we used this framework to address the scope of this performance audit.

Management waived an exit conference.

APPENDIX C: MANAGEMENT COMMENTS



Department of Energy
Washington, DC 20585

April 8, 2016

MEMORANDUM FOR GEORGE COLLARD
DEPUTY INSPECTOR GENERAL FOR AUDIT SERVICES
OFFICE OF INSPECTOR GENERAL

FROM: MICHAEL JOHNSON
CHIEF INFORMATION OFFICER 

SUBJECT: Inspector General's Draft Audit Report on "The Department of Energy's Energy Information Technology Services Federal Support Costs (A15TG023)"

Thank you for the opportunity to review and comment on the subject draft report. The Department appreciates the auditors' objective review and concurs with the Office of Inspector General's recommendations.

Since this audit was conducted, the Office of the Chief Information Officer (OCIO) completed a substantial review of all available funding for provisioning commodity IT to the Department and worked with the Office of the Chief Financial Officer (OCFO) to ensure full cost recovery of EITS services moving forward. The information in the subject report will enable the OCIO and the Program Offices to take additional follow-up actions, as well as to continue to work in the most effective way to improve the Department's EITS support costs.

Specific comments and actions proposed are contained in the attached technical comments. If you have any additional questions, please feel free to contact Sarah Gamage, Deputy CIO for Resources Management.



Management Response to the Office of Inspector General's Evaluation Report
on "The Department of Energy's EITS Federal Support Costs"

Responses to Recommendations

Cost Recovery of Services Recommendation 1a. *Refine the IT billing process, to include (a) adapting the service prices on a regular basis and setting the price of services at a level that meets the organization's recovery strategy.*

Response: Concur

EITS developed a new cost model to ensure full cost recovery for FY16. The model will be reviewed and updated every 6 months starting in April 2016 to ensure full cost recovery. Full cost recovery does not include Federal personnel costs.

Completed - Estimates with new full recovery rates sent out starting in December 2015.

Cost Recovery of Services Recommendation 1b. *Refine the IT billing process, to include (b) developing a process to track and forecast cost recovery.*

Response: Concur

The OCIO developed a new cost model to ensure full cost recovery for FY16. The model will be reviewed and updated every 6 months starting in April 2016 to ensure full cost recovery and costs will be tracked and forecasted in the now standardized categories moving forward.

Estimated Completion Date: 4/30/2016

Cost Recovery of Services Recommendation 2a. *Enhance other direct costs tracking in the EITS contracts, to include (a) developing an automated process to better track spending of other direct cost items on large contract work orders.*

Response: Concur

The OCIO is initiating a project to expand current capabilities of the DOE At Your Service (DAYS) System to automatically track all other direct cost requests, regardless of size, to include work flows with approvals, as necessary.

Estimated Completion Date: 9/30/2016

Cost Recovery of Services Recommendation 2b. *Enhance other direct costs tracking in the EITS contracts, to include (b) establishing an invoice dollar threshold that triggers additional detailed review.*

Response: Concur

Since the project referred to in Recommendation 2a will enable tracking of all direct costs regardless of size, a threshold will not be necessary, but the intent of the recommendation will be met.

Estimated Completion Date: 9/30/2016

Cost Recovery of Services Recommendation 3. *Manage disparate timing for both spending and recovery by developing a strategy for early fiscal year billing that emphasizes executing budgeted cost types and working with customers to receive notifications of potential funding delinquencies*

Response: Concur

The Department developed a new funding collection process. This process, once implemented, would require customers to pay on or ahead of costs incurred. The customer annual allocations will be established in STARS and OCIO will have the ability to draw directly from customer accounts as soon as customers acknowledge and approve the amounts estimated to provide services. Customers will continue to receive a bill each month detailing all of their services.

Estimated Completion Date: 9/30/2016; however, this new method requires 100 percent participation by all customers in order to work properly, so completion is dependent on finalization of customer agreements.

Cost Recovery of Services Recommendation 4. *Establish an EITS shared services customer target by (a) Performing a study to determine if additional economies of scale are available; (b) Developing a program participation strategy that addresses the customer targets; (c) Setting up periodic management checkpoints to track and manage the status of reaching the new targets, if applicable.*

Response: Concur in principle.

“Commodity IT Services” is a continuing agenda item in the Information Management Governance Board (IMGB). The OCIO is collaborating with the extended enterprise to create improvements that will encourage broader participation. Economies of scale would be achieved for many services as participation increased.

Estimated Completion Date: Ongoing

Cost Model Recommendation 5. *CIO direct the Deputy CIO for Enterprise Operations and Shared Services and the Deputy CIO for Resources Management to develop an IT cost model that correlates costs to services provided by EITS, tracks allocation decisions, and maintains historical records, and that has the capability to track budget to execution variance and forecasting abilities.*

Response: Concur

The new cost model (see Cost Recovery of Services Recommendation 1a) outputs rates for all services and those are manually loaded into the EITS billing system. The OCIO is exploring how to imbed the new cost model into the existing billing system allowing it to dynamically calculate rates and automatically update rate tables, track allocation decisions, maintain historical records, track budget to execution variance, and provide forecasting abilities.

Estimated Completion Date: March 2017

Cost Model Recommendation 6. *CIO direct the Deputy CIO for Enterprise Operations and Shared Services and the Deputy CIO for Resources Management to integrate the cost model with the IT service management system to link it directly to end user IT consumption, thereby enhancing transparency and accuracy of customer bills.*

Response: Concur

See response to recommendation 5.

Estimated Completion Date: March 2017

Cost Model Recommendation 7a: *CIO direct the Deputy CIO for Enterprise Operations and Shared Services and the Deputy CIO for Resources to Integrate cost types and WBS with cost management tools to (a) Define a crosswalk to both internal and external management and reporting requirement*

b. Develop transparent and easy to understand cost types and WBS codes that are available to all program management and customer organizations.

Response: Concur

New STARS reporting entity codes were developed as part of the newly developed funding process that will allow for better identification and understanding of the charges. These new STARS reporting entity codes will be integrated into the project being studied for Cost Model Recommendation 5.

Estimated Completion Date: 3/31/2017

Cost Model Recommendation 7b: *CIO direct the Deputy CIO for Enterprise Operations and Shared Services and the Deputy CIO for Resources Management to integrate cost types and WBS with cost management tools to (b) develop transparent and easy to understand cost types and WBS codes that are available to all program management and customer organizations.*

Response: Concur

New STARS reporting entity codes were developed as part of the newly developed funding process that will allow for better identification and understanding of the charges.

Estimated Completion Date: Reporting entity codes are complete as of December 2015.

Service Quality Recommendation 8a: *CIO direct the Deputy CIO for Enterprise Operations and Shared Services to enhance EITS service management by (a) Tracking and monitoring resolution progress through IT customer account managers and IT points of contact.*

Response: Concur

DAYS already provides IT POCs the ability to track tickets through to resolution and each organization has a dashboard to facilitate this tracking.

Estimated Completion Date: Completed

Service Quality Recommendation 8b: *CIO direct the Deputy CIO for Enterprise Operations and Shared Services to enhance EITS service management by (b) developing and implementing effective processes and training for resolving customer IT incident.*

Response: Concur

The current EITS Service Desk service provider requires Service Desk staff to go through Help Desk Institute and Information Technology Infrastructure Library foundation training, either as a prerequisite to hire or after a probationary period.

Additionally, the following training is conducted:

- Once a month a training meeting with Tier 3 SMEs is held for Service Desk staff on various topics and issues.
- The Service Desk staff has ongoing meetings with the Problem Management team
- Tier 1 Leads listen in on calls for quality assurance purposes and feedback and lesson learned are collected and applied.
- Tier 1s maintain and periodically review Knowledge Base (KB) articles

Estimated Completion Date: Completed

Service Quality Recommendation 8c: *CIO direct the Deputy CIO for Enterprise Operations and Shared Services to enhance EITS service management by (c) Configuring the service management system to send an email to end users when a ticket is closed providing a link that allows users to reopen incidents without issuing a new ticket if their original ticket was not completely resolved.*

Response: Concur

A notification is already generated from DAYS to the customer when a ticket is resolved. The ability to reopen a ticket, if a customer feels it is not resolved, already exists, but is not clear to customers. We have identified the necessary changes to the email sent when a ticket is closed and will be implementing these revisions in the very near future.

Estimated Completion Date: 6/30/2016

Service Quality Recommendation 9a: *CIO direct the Deputy CIO for Enterprise Operations and Shared Services to Implement improvements to the customer billing process by (a) Documenting the billing process to include, as part of the customer agreement, the expectations of bill timing and the sources from which to obtain the bill*

Response: Concur

The Department has developed a new funding process. This process, once implemented, would require customers to pay on or ahead of costs incurred. The customer annual allocations will be established in STARS and OCIO will have the ability to draw directly from customer budgets if necessary as soon as customers acknowledge and approve the amounts estimated to provide services. Customers will continue to receive a bill each month detailing all of their services.

Estimated Completion Date: September 2016; however, this new method requires 100 percent participation by all customers in order to work properly, so completion is dependent on finalization of customer agreements.

Service Quality Recommendation 9b: *CIO direct the Deputy CIO for Enterprise Operations and Shared Services to implement improvements to the customer billing process by (b) updating the customer bill to illustrate, at a minimum, the name of the service, the unit cost of the service provided, the units of service consumed, and the resulting aggregate costs for those services.*

Response: Concur

The OCIO created a new cost recovery model that establishes six specific shared service categories. Within these categories, a customer can view total costs to provision services, the allocation methodology, the number of cost “units” attributed to their program, and the resulting unit cost. The cost and units are updated every six months.

Estimated Completion Date: Completed