Memorandum from the Office of the Inspector General

June 29, 2012

Daniel A. Traynor, SP 3A-C
Diane T. Wear, WT 4B-K

REQUEST FOR MANAGEMENT DECISION – AUDIT 2011-13945 – [REDACTED] IMPLEMENTATION

Attached is the subject final report for your review and management decision. You are responsible for determining the necessary actions to take in response to our findings. Please advise us of your management decision within 60 days from the date of this report. Final action is due within one year from the date of management decision.

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

If you have questions, please contact Amy R. Rush, Audit Manager, at (865) 633-7361 or Lisa H. Hammer, Director, Operational Audits, at (865) 633-7342. We appreciate the courtesy and cooperation received from your staff during the audit.

Robert E. Martin

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Assistant Inspector General
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OIG File No. 2011-13945

Office of the Inspector General

Audit Report

To the Senior Vice President and Chief Information Officer and to the Vice President and Controller

[REDACTED] IMPLEMENTATION

Audit Team
Amy R. Rush
Sarah E. Huffman

Audit 2011-13945
June 29, 2012

ABBREVIATIONS

ARB	Architectural Review Board
CEO	Chief Executive Officer
CobiT	Control Objectives for Information and Related Technology
[REDACTED]	
[REDACTED]	
FS	Financial Services
FY	Fiscal Year
HR	Human Resource
[REDACTED]	
[REDACTED]	
IT	Information Technology
OIG	Office of the Inspector General
PMC	Project Management Council
PRB	Project Review Board
[REDACTED]	
SPP	Standard Programs and Processes
TVA	Tennessee Valley Authority
VP	Vice President

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A. [REDACTED]

B. MEMORANDUM DATED JUNE 15, 2012, FROM DIANE T. WEAR AND DANIEL A. TRAYNOR TO ROBERT E. MARTIN

EXECUTIVE SUMMARY

According to project documentation, in fiscal year 2010, the Tennessee Valley Authority's (TVA) Chief Executive Officer tasked Financial Services (FS) with replacing all TVA-issued purchasing cards with a single Corporate Credit Card solution to maximize TVA's credit card rebates. FS personnel stated the intent was to reduce the number of outstanding cards and decrease risk exposure. The project plan, dated August 18, 2011, stated FS and Information Technology formed a project team to implement the new solution. The project team proposed the [REDACTED] system, [REDACTED], be implemented to replace TVA's [REDACTED] systems.

We initiated this audit based on discussions with FS personnel regarding the implementation of a new expense system. Our audit objectives were to (1) assess whether TVA performed adequate analysis for its decision to implement the [REDACTED] application and (2) verify TVA's systems development processes were being followed and system and business protocols were considered during the implementation of the [REDACTED] application. We did not complete the second objective because the [REDACTED] project was merged with the [REDACTED] project. Our audit scope included the analysis performed to make the decision to implement the [REDACTED] application as of May 31, 2011, as well as documentation supporting those decisions.

We concluded, based on project documentation and discussions with project management personnel, adequate analysis was not performed in the decision to implement the [REDACTED] application. Specifically, the decision was made without adherence to TVA's project management policies resulting in time delays within the project, inadequate budget planning, duplication of efforts including potential waste of resources, and project management inefficiencies. Even though steps were taken to (1) define a business need, (2) derive estimates for cost and time implementation and identify ownership, (3) evaluate alternative system solutions, (4) obtain approvals and define a budget, and (5) assess the current and future business conditions, these efforts were made after [REDACTED] was chosen as the system solution. Without understanding the reasons and parameters for implementing a new expense management system, the project team's efforts to follow the process as outlined in the project management policies were wasted and resulted in schedule delays as well as project management team frustrations.

We recommend the Vice President and Controller ensures project management policies are followed with TVA's mission in mind by communicating those policies to individuals within the organization and stressing the importance of (1) adequately defining the business need for a project prior to selecting the solution, (2) validating assumptions and evaluating the business conditions and alternative solutions, and (3) determining project budget limits and obtaining project approval.

TVA management agreed with the recommendations; however, they disagreed with some of the facts and conclusions noted in the report. We have revised the report, as appropriate, to address TVA management's comments. See Appendix B for TVA's complete response.

BACKGROUND

In fiscal year (FY) 2010, according to the [REDACTED] system, [REDACTED], project documentation, the Tennessee Valley Authority's (TVA) Chief Executive Officer (CEO) tasked Financial Services (FS) with replacing all TVA-issued purchasing cards[1] with a single Corporate Credit Card solution to maximize TVA's credit card rebates. FS personnel stated the intent was to reduce the number of outstanding cards and decrease risk exposure. The [REDACTED] project plan, dated August 18, 2011, stated FS and Information Technology (IT) formed a project team and proposed TVA's [REDACTED] systems be replaced with [REDACTED] to support this single card solution. According to FS and IT personnel, TVA assumed, based on information provided by Supply Chain personnel, 13,000 full-use licenses of [REDACTED] were already owned by TVA as part of the [REDACTED].[2] According to FS personnel, TVA initially considered this implementation to be an enhancement to the existing [REDACTED] of applications, referred to as the [REDACTED], rather than a separate project as defined by TVA policies. In addition, the timeframe for implementing [REDACTED] was expected to be short, and the implementation cost was expected to be low.

According to the November 2011 timeline prepared by the project team, the decision to implement [REDACTED] was made by FS in September 2010, and in November 2010, a functional project lead was assigned to the project. By this time, TVA had determined the time and resources necessary to implement [REDACTED] made it necessary to reclassify it from an "enhancement" to a "project." In December 2010, IT personnel presented the [REDACTED] project to the IT Architectural Review Board (ARB), and the project was assigned an IT project manager.

TVA project management policies are designed to provide a framework for decision making regarding project initiation and project control. At the time the decision was made to implement [REDACTED], there existed three project management standard programs and processes (SPP) relevant to [REDACTED] implementation: one specific to IT and two TVA-wide SPPs. These SPPs[3] established the governance for management and control of TVA projects and defined the responsibilities of project team members as well as project phases and their purposes.

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1 This includes the TVA Citibank travel card, fuel management card, and executive VISA gold credit card, as well as the TVA VISA Purchasing Card.

2 TVA purchased the [REDACTED] of applications in 2006. According to FS personnel, TVA had previously planned to implement [REDACTED] in 2008 when TVA's [REDACTED] system was replaced; however, the Chief Administrative Officer at the time decided against the [REDACTED] implementation. It was explained that cost may have been a factor for this decision.

3 The SPPs in effect at the date of project initiation were TVA-SPP-34.0, Project Management; TVA-SPP-19.3, Project Justification Process; and IS-SPP-PO10, Manage IT Projects.

In March 2011, the Office of the Inspector General (OIG) initiated an audit with the purpose of assessing the decision to implement [REDACTED]. However, after issuing the scheduling memorandum, the FS General Manager informed us no final decision had been made on deploying [REDACTED], and analysis was currently being performed to make the decision. The General Manager also mentioned [REDACTED] was a component module in TVA's [REDACTED] system, and analysis for implementing [REDACTED] would have originally been performed as part of the selection of the [REDACTED] of applications. At that time, the OIG canceled the review. The OIG later learned the implementation project was back in progress and therefore initiated the current review.

In January 2012, the [REDACTED] project was combined with the [REDACTED] project. The [REDACTED] is a module of [REDACTED]; therefore the two are highly integrated. The [REDACTED] is contingent upon the completion of the [REDACTED]; therefore, the estimated go-live date was moved to October 2012. The current budget for the [REDACTED] implementation project is approximately $1.3 million with actual expenditures to date of approximately $522,000. [REDACTED].

OBJECTIVES, SCOPE, AND METHODOLOGY

We initiated this audit based on discussions with FS personnel regarding the implementation of a new expense system. Our audit objectives were to (1) assess whether TVA performed adequate analysis for its decision to implement the [REDACTED] application and (2) verify TVA's systems development processes were being followed and system and business protocols were considered during the implementation of the [REDACTED] application. During our fieldwork, the [REDACTED] project was merged with the [REDACTED] project. Once these two projects were merged, [REDACTED] implementation was delayed. Therefore, we did not conduct our second objective. The scope of this audit included the analysis performed to make the decision to implement the [REDACTED] application as of May 31, 2011, as well as documentation supporting those decisions.[4]

To achieve our objective, we:

- Interviewed FS and IT personnel, as well as other [REDACTED] stakeholders, to determine the reasons for initiating the project as well as the analysis performed in the selection of [REDACTED] and obtained documentation supporting those decisions.
- Reviewed project documentation including, but not limited to, the project charter, scope statement, project timeline, and project approval documentation to determine the reasons for initiating the project as well as the analysis performed in the selection of [REDACTED].

[4] Documentation supporting the decisions may have been dated after May 31, 2011.

- Examined the *Project Management Body of Knowledge Guide*, which documents standard terminology and guidelines for project management for best practices related to project initiation.
- Identified project management policies and procedures through a search of TVA's on-line Procedure Center. We identified three specific SPPs that were in effect during project initiation, which we considered relevant to the [REDACTED] project.
- Reviewed TVA-SPP-34.0, Project Management; TVA-SPP-19.3, Project Justification Process; and IS-SPP-PO10, Manage IT Projects, to determine the documented processes and controls for managing a project.
- Evaluated the information gathered from the interviews and project documentation against the processes and controls outlined in the SPPs to conclude whether TVA performed adequate analysis for its decision to implement the [REDACTED] application.

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

As part of the CEO-driven initiative for a single Corporate Credit Card, [REDACTED] was selected as the solution to be implemented. We concluded, based on project documentation and discussions with project management personnel, adequate analysis was not performed in the decision to implement the [REDACTED] application. Specifically, management failed to adhere to TVA's project management policies due to management circumvention of controls.[5] Even though steps were taken to (1) define a business need, (2) derive estimates for cost and time implementation and identify ownership, (3) evaluate alternative system solutions, (4) obtain approvals and define a budget, and (5) assess the current and future business conditions, these efforts were made after [REDACTED] was chosen as the system solution. This resulted in time delays within the project, inadequate budget planning, duplication of efforts including potential waste of resources, and project management inefficiencies.

[5] For purposes of this report, we characterized the finding as a management circumvention of controls based on the (1) July 2007 *Government Auditing Standards'* definition of internal controls over program operations and (2) TVA-SPP-19.3, Project Justification Process, definition of project review and approval as a Sarbanes-Oxley control activity. While we found no indication of fraud in the performance of our review, we did find management did not follow procedures or controls designed to mitigate risks, including fraud risk.

Business Need Not Defined

As stated earlier, [REDACTED] was selected[6] by FS as the system solution in September 2010; however, we were provided no evidence that a business need for implementing a new system was defined prior to that selection. The most recent project charter dated July 2011 and project plan dated August 2011 stated the project was undertaken to streamline the expense process. According to the project charter, the three systems utilized to manage TVA's credit cards had failed to route monies properly causing rejections that must be corrected by journal entries each month. In addition, the project charter stated that current systems had failed to provide a complete audit picture. Although the project charter did not specifically state the business need for an expense management system, in our opinion, the stated purpose for undertaking the project was to streamline the process as well as correct or remove the legacy system issues, not provide a solution for the single corporate card.

In addition, we were provided no evidence the [REDACTED] project sponsor communicated and agreed upon the business need or expectations with the project team. Specifically, there was no evidence the [REDACTED] project sponsor[7] reviewed or approved documentation, such as the charter, scope statement, and plan. These documents outline the description, goals, and objectives of the project. In addition, the [REDACTED] project management team was not able to iterate management expectations and ways to measure those expectations. According to the project team, the [REDACTED] project has had many "stops and starts" due to a lack of clear direction and available funding.

According to TVA project management SPPs, a purpose or business need for undertaking the project should be established and documented prior to the evaluation of options and selection of the best solution. The business need could be based on reasons including, but not limited to, market demand, technological advancement, and/or legal or regulatory requirements. A defined business need aids in the determination of whether a project is worth the required investment as well as the identification of project objectives and stakeholder expectations to aid the project management team in the implementation of a solution that best meets the organization's needs.

Verifiable Assumptions Should Have Been Validated or Better Estimated

When projects are planned and executed, information critical to the project's success may or may not be available; therefore, it is assumed and validated when possible. These assumptions aid in adequate analysis of risks, efficient project planning, and timely delivery of the project. Project documentation and discussions with the project team indicate [REDACTED] was selected in September 2010 for implementation based on a combination of three factors: implementation cost, estimated time to implement, and the ownership of

[6] As shown later in this report, no evidence exists that the project was actually approved.

[7] A project sponsor's responsibilities include securing funding for the project as well as ensuring projects are vetted through the project justification or TVA's business planning processes and approval.

[REDACTED] by TVA.[8] However, each factor that was used as a basis for selecting [REDACTED] was based on flawed information and/or incorrect assumptions that could have been validated or better estimated prior to the decision.

Implementation Costs and Estimated Implementation Time

The project timeline, dated November 2011, stated an agreement for the Corporate Credit Card was drafted in response to the CEO's request. The timeline, provided by the project team, indicated soon after this agreement was drafted in the fourth quarter of FY 2010, discussions were held as to whether to upgrade [REDACTED] or move to [REDACTED]. The original cost and time estimates for implementing [REDACTED] totaled $165,000 (later revised to $100,000) and 3 months. The completion date for [REDACTED] was originally scheduled for April 2011. In contrast, cost and time estimates provided by Supply Chain personnel indicated it was cheaper and less time-consuming to upgrade the legacy systems rather than to implement [REDACTED]. At the time the [REDACTED] decision was made, these upgrades to the legacy systems were estimated at approximately $60,000[9] and 130 hours and were based upon approximately 20 requirements specific to those systems and dependent upon the availability of subject matter experts. However, according to project management personnel, the initial estimate of approximately $60,000 for upgrading these systems was thought to be well below the true cost. Additional cost estimates for upgrading the legacy systems were provided for February and March 2011. These costs ranged from approximately $65,000 to $346,000.

Despite the fact estimates to upgrade [REDACTED] were less than estimates to implement [REDACTED], the November 2011 project timeline, provided by the project team, indicates [REDACTED] was selected as the system solution in September 2010. However, it was later determined the original estimates of $100,000 and $165,000 for implementing [REDACTED] did not take into account all aspects of implementation. According to IT personnel, original cost estimates were verbally provided to FS and were based on the technical configuration of the system only, neither taking into consideration the requirements that needed to be met nor the end-user training to be provided; whereas, FS personnel understood the provided amounts to be the total implementation cost of [REDACTED]. When the project team realized this gap, they revisited the initial estimates for implementing [REDACTED]. Several cost estimates ranging from approximately $474,000 to approximately $1 million were calculated by the project team during March 2011 for the [REDACTED] implementation. The [REDACTED] project team informed the OIG in July 2011 they estimated the cost of the project would total approximately $1.2 million; however, we noted the FY 2011 and 2012 budgets, according to the project team's timeline, indicated an

[8] Because the module is part of the [REDACTED], which was purchased by TVA in 2006, [REDACTED] would be integrated with TVA's current [REDACTED] system.

[9] Project documentation indicates project costs for upgrading [REDACTED] were only estimated to be approximately $50,000. Cost estimate spreadsheets obtained from Supply Chain personnel indicated an additional $10,000 would be needed to update [REDACTED].

estimate of about $1.3 million. We have included a timeline of estimated project costs and implementation dates below (see Table 1). These estimates are based on project documentation and interviews with the project team.

Date	Estimated Cost to Implement	Estimated Implementation Date
September 2010	$165,000	April 1, 2011
November 2010	$100,000	April 1, 2011
March 2011	$437,000 - $787,400	April 1, 2012
March 2011	$542,000 - $843,000	May 1, 2012
March 2011	$1,005,000	None provided
July 2011	$1,200,000	None provided
October 2011	$1,343,200	None provided

Table 1

Project documentation indicates estimates during and after March 2011 were based on a list of requirements gathered specifically for the implementation of [REDACTED] but without input from project stakeholders affected by the change. According to the IT project management policy, project stakeholders include the sponsor and representatives from the business units that will be the recipients of project deliverables. However, project documentation indicated there were no representatives from TVA organizations outside FS, People and Performance, and IT even though personnel within all other TVA organizations would be affected by the project.

Ownership of [REDACTED]

As stated previously, TVA purchased the [REDACTED] in 2006 and implemented [REDACTED] in 2008. The [REDACTED] was included in the purchase; however, TVA management decided not to implement the module at that time. When the decision was later made to implement [REDACTED], the understanding was that TVA owned enough licenses for each of TVA's approximately 13,000 employees to generate expense reports. This was based on information received from Supply Chain indicating no additional licenses needed to be purchased. In actuality, TVA owned licenses to produce 13,000 expense reports, which would mean each employee could submit approximately one expense report per year. According to project documentation, this was not discovered until September 2011, 1 year after the decision was made to implement [REDACTED]. The additional purchase of the licenses added about $260,000 to the project cost, which was not included in the original or updated estimates discussed earlier.

It is our opinion, each of the three factors previously discussed–implementation cost, estimated time to implement, and ownership–could have been better estimated or validated if due diligence had been performed prior to the selection of [REDACTED]. The determination to implement [REDACTED] was made based on cost and time estimates that were verbally discussed but not fully understood by FS and IT personnel. This misunderstanding caused the project team to revisit the implementation estimates on multiple occasions resulting in duplication of efforts and a potential waste of resources. In addition, although FS and IT personnel knew TVA owned [REDACTED], the licensing use was not

confirmed and included in the cost prior to determining [REDACTED] was to be implemented.

Alternative Solutions Not Adequately Evaluated

We determined alternative solutions were not adequately evaluated prior to system selection. There were three choices TVA faced when deciding to implement a new expense management system: (1) keep the legacy systems [REDACTED] that were currently in place, (2) implement the [REDACTED] application already owned by TVA, or (3) explore other expense management applications. These choices could have been narrowed down based on the business need, as stated above, as well as the identification of business requirements. It is our opinion, requirements were not adequately defined based on TVA's IT project management policy and Control Objectives for Information and Related Technology (CobiT)[10] in order to obtain a reasonable estimate for cost comparison of each solution. In addition, we question whether the evaluation process for the alternative solutions was necessary based on conversations with FS and IT personnel and project documentation stating issues with the legacy systems and costs associated with implementing a new system not owned by TVA.

When documenting the requirements for a new system, it is good business practice to document those needs based on current- and future-state practices and processes as well as stakeholder expectations. To perform an adequate assessment of the alternative solutions, it is our opinion, based on TVA's IT project management policy and CobiT, the systems should be measured against the business requirements rather than the other way around. To further clarify, a list of requirements should be documented and system alternatives should be compared to the list of requirements prior to system selection. As stated previously, a few requirements were derived specifically for the cost estimation to upgrade the legacy systems; whereas, no requirements were included in the initial estimate for implementing [REDACTED]. Project documentation indicates requirements, specific to [REDACTED], were later documented. However, business requirements should be established prior to the evaluation of alternatives since these requirements factor into the true cost of a system upgrade or implementation.

During the [REDACTED] demonstrations occurring in January 2011, FS personnel stated the only system options were to upgrade the current systems or to implement [REDACTED] since it was part of the [REDACTED], which TVA had already purchased. We noted estimates for upgrading the legacy systems were revisited three times[11] during second quarter 2011 with the estimates being cheaper than cost estimates for implementing [REDACTED]; however, the decision was made to continue with the [REDACTED] implementation. According to the former project sponsor, this was because the legacy systems could not

[10] CobiT is a framework created by the Information Systems Audit and Control Association for IT management and IT governance.

[11] The first revised estimate did not include the cost to upgrade [REDACTED].

support the one-card initiative requested by the CEO. In addition, the project team's timeline, dated November 2011, stated legacy systems would likely have to be replaced at some point in the future since the decision to implement a new Human Resource (HR)/Payroll system had been made. As stated previously, it was also noted in the most recent project charter dated July 2011 that legacy systems have failed to (1) route monies properly, causing rejections that must be corrected by journal entries each month and (2) provide a complete audit picture, causing the auditing of a group of transactions to be unnecessarily complex. Since these issues were apparent with regard to the legacy systems, it begs the question of why that alternative was considered and then revisited multiple times. According to IT personnel, the upgrades may have been considered because the legacy systems are good products built specifically to support TVA's processes and are [REDACTED]; however, the disadvantages to the upgrades are the maintenance costs of customized software for TVA as well as the single points of failure with regard to system experts.

As noted above, FS personnel originally stated there were only two options for implementing an expense management system; however, in March 2011, the IT project team studied Travel and Expense Management solutions provided by Gartner, Inc., as well as performed internet searches for additional publications. In addition, project documentation indicates Supply Chain personnel requested quotes for expense management systems from five companies; however, project documentation also stated the quotes were not received. Based on the research performed, IT recommended the project team continue with [REDACTED] since choosing a product TVA did not currently own would result in (1) a scope increase due to the competitive bid process and additional interface development; (2) a cost increase due to licensing, infrastructure, and interface builds; and (3) an implementation delay of 3 to 6 months. According to the project team's timeline, in September 2011, the project team reevaluated the possibility of utilizing a system TVA did not own based on the fact TVA had inadequate licensing for [REDACTED]. According to that documentation, a price was obtained from one vendor,[12] and it was decided to keep [REDACTED] and negotiate the licensing costs as part of the HR/Payroll system selection.

Project Approval Not Obtained and Budget Not Established

We were provided no evidence the project was entered into the Project Management Council (PMC) or Project Review Board (PRB) processes or approval was obtained for the project prior to the September 2010 decision. As stated previously, FS personnel considered [REDACTED] to be an enhancement to the existing [REDACTED] of applications rather than a separate project as defined by TVA policies; therefore, project approval would not have been sought. According to project management policies, it is the responsibility of the project sponsor, initially the FS General Manager for [REDACTED] who later became IT's Enterprise Solutions Delivery Vice President (VP), to secure funding for the project as well as to ensure projects are vetted through the project justification or TVA's business planning processes and approval. This includes presenting the

[12] One of the two vendors considered for the HR/Payroll system implementation. [REDACTED].

project to the organization's PMC or PRB who have oversight responsibility for project planning and control. In addition, this includes obtaining project approval from certain officers and/or executives, dependent on the project cost and classification of the project as capital or operations and maintenance. Based on these policies, approval of the [REDACTED] project should have been granted by the organization's VP or a delegate. According to the organizational chart dated May 2011, IT's Enterprise Solutions Delivery VP, who originally fulfilled the role of project sponsor, was also the equivalent of the organization's VP.

Based on this explanation, we attempted to obtain evidence of this communication to IT. However, we could find no evidence the enhancement was communicated to IT or that it was entered into the process for changing TVA's production environment as required by an IT SPP.[13] We were provided evidence of the [REDACTED] project submittal to the ARB for approval by IT personnel, although this occurred in December 2010, 3 months after [REDACTED] was selected as the system solution. According to the project sponsor, when the project was taken before the ARB, the ARB determined the [REDACTED] project fell within the scope of the HR/Payroll system replacement project. Had the project been vetted through the PMC or PRB, the determination may have been made to cancel the [REDACTED] project since the project fell within the scope of the HR/Payroll system project. We also reviewed project documentation to determine when the [REDACTED] project was entered into the project justification process. According to IT personnel, they were in the process of entering the project into the project management process as of December 2011, 1 year after the project was presented to the ARB.

Although [REDACTED] did not go through the project justification or business planning processes, FS and IT personnel stated FS had enough money in the FY 2010 budget to implement [REDACTED], based on initial project estimates of $100,000 to $165,000, which considered [REDACTED] an enhancement to the [REDACTED] of applications. FS and IT personnel further stated FS did not have enough money in the FY 2011 budget to implement [REDACTED] as a project, based on revised estimates of approximately $400,000 to $1.2 million. We were provided no evidence defining the budget limits for implementing an expense management system were ever discussed or set. In addition, we could not verify the initial budget and some budget revisions because they were overwritten by the project management team and previous versions were not maintained. We were provided with documentation, dated December 2010, indicating budget dollars of $142,750 were moved from [REDACTED] to [REDACTED]. According to IT project management personnel, the funding had been transferred to IT as part of the IT budget centralization effort in FY 2012.

As stated earlier, it is the responsibility of the project sponsor to identify the business need and secure funding for the project as well as to ensure projects are approved. This also includes emergent projects that were neither previously

[13] IT-SPP-12.09, Manage Changes, provides guidelines for making changes, including enhancements, to TVA's production environment.

prioritized nor had funding previously allocated, such as [REDACTED]. When approvals are not obtained prior to project implementation, the risk of spending money on projects that are not suited to meet TVA's need is heightened. In addition, when budget limits are not defined prior to project implementation, the organization runs the risk of unlimited spending on one project, which could affect the timing and cost of other ongoing or planned projects or enhancements.

Business Conditions Not Adequately Assessed

Along with a business need not being defined and requirements not being established prior to selecting a system solution, project documentation indicates business conditions were also not assessed. It is our opinion, based on data provided by IT personnel, that assessment of the business conditions did not occur prior to the September 2010 decision to implement [REDACTED] because FS assumed the project could be implemented within 3 months or by April 2011; therefore, future system upgrades and changes in business practice would not immediately affect [REDACTED] implementation. However, business conditions should have been assessed to determine whether the project affected other future or on-going projects. We were provided no evidence discussions were held regarding the effect of [REDACTED] on existing or future TVA systems prior to April 2011. In addition, we were provided no evidence the sponsor or project team reviewed the prior work performed for the 2008 [REDACTED] planned implementation or the reasons for not implementing [REDACTED].

According to the project team's timeline, dated November 2011, the decision to implement a new HR/Payroll system had been made as of March 2011.[14] We noted some expense functionality requirements overlap between the HR/Payroll and [REDACTED] systems, such that expense requirements were included in the HR/Payroll system request for proposal, dated May 20, 2011, and vendor demonstrations for the HR/Payroll replacement system selection process. As stated above, requirements for the [REDACTED] project were gathered specifically for the implementation of the system without input from all personnel affected by the change. According to the project sponsor, when the project was taken before the ARB, the ARB determined the [REDACTED] project fell within the scope of the HR/Payroll system project. However, a business process review workshop was not scheduled with the HR/Payroll system project team until April 2011. In February 2012, we were informed discussions have been held once again by the [REDACTED] and HR/Payroll system project teams with regard to functionality requirements.

Furthermore, various decisions affecting the scope and/or schedule of the [REDACTED] project are still being made. Specifically, the decision to merge the [REDACTED] implementation with the [REDACTED] project was made in January 2012. Once these two projects were merged, [REDACTED] implementation was delayed. The [REDACTED] project plan, dated August 2011, noted resources were being shared among [REDACTED], the HR/Payroll system

[14] According to an Executive Steering Committee presentation, the decision to implement a new HR/Payroll system was known as early as November 2010.

implementation, and [REDACTED] projects with regard to the technical project leads. In addition, the decision to implement travel per diem for meals rather than actuals was made in February 2012.[15] This decision affects the requirements to be included in the [REDACTED] implementation.

As previously stated, TVA planned to implement [REDACTED] in 2008 when the [REDACTED] system was replaced; however, the Chief Administrative Officer decided against the [REDACTED] implementation. According to the FS General Manager, analysis for implementing [REDACTED] would have originally been performed as part of the selection of the [REDACTED] of applications. However, neither the sponsor nor the project team reviewed the prior work performed for the 2008 [REDACTED] planned implementation or the reasons for not implementing [REDACTED]. Review of prior decisions and work performed may have provided FS and IT with a better idea of the scope of work the implementation would entail as well as could potentially decrease duplication of efforts.

Based on the above, it is our opinion that the decision to implement [REDACTED] was made without coordinating with other TVA on-going or future projects. This coordination could have resulted in potential cost reductions and improved project management efficiencies, not only with the [REDACTED] project but with other related system projects as well.

CONCLUSION

We conclude the decision to implement [REDACTED] was made without adherence to TVA's project management policies due to management circumvention of controls.[16] Not initially defining the business need for the project as well as not allowing the process to guide the project team to the most appropriate solution resulted in time delays within the project, inadequate budget planning, duplication of efforts including potential waste of resources, and project management inefficiencies. The assumption that TVA owned adequate licenses for generating expense reports as well as the understated estimated cost and time for implementing [REDACTED] may have clouded the judgment of the project team in the selection of the most appropriate system solution. When it was determined these factors were flawed, the project team attempted to follow the process as outlined in the project management policies, but without understanding the reasons and parameters for implementing a new expense management system, these efforts were wasted and resulted in schedule delays as well as project management team frustrations. While we cannot state another system solution would have been more suitable to meet TVA's needs, neither can we state [REDACTED] is the best solution. We can conclude, however, better

[15] Discussions to move to per diem were taking place as early as December 2011.

[16] As stated previously, we characterized the finding as a management circumvention of controls based on the (1) July 2007 *Government Auditing Standards'* definition of internal controls over program operations and (2) TVA-SPP-19.3, Project Justification Process, definition of project review and approval as a Sarbanes-Oxley control activity. While we found no indication of fraud in the performance of our review, we did find management did not follow procedures or controls designed to mitigate risks, including fraud risk.

defining the project need and adequately following the process, as outlined in TVA's project management policies, could increase project management team efficiencies.

RECOMMENDATION

We recommend the VP and Controller ensure project management policies are followed with TVA's mission in mind by communicating those policies to individuals within the organization and stressing the importance of (1) adequately defining the business need for a project prior to selecting the solution, (2) validating assumptions and evaluating the business conditions and alternative solutions, and (3) determining project budget limits and obtaining project approval.

MANAGEMENT'S RESPONSE AND OUR EVALUATION

TVA management agreed with the recommendations; however, they disagreed with some of the facts and conclusions noted in the report. Specifically, TVA management disagreed with:

- The description of the task FS was given by the CEO with regard to replacing existing credit cards. We added to the final report the intent of the task as described by FS.
- The use of the words "management override of controls" to describe the findings. We revised the wording in the report and added a footnote explanation.
- The description of the (1) [REDACTED] selection date and (2) project sponsor involvement business need finding. TVA management's comment letter said the decision to implement [REDACTED] was in April 2011, not September 2010 as stated in our report. We disagree. TVA management's assertion in this regard is contrary to the evidence we collected in the course of the audit. We considered the [REDACTED] selection date to be September 2010 based on several factors. Specifically, the project timeline, prepared by the project team, stated [REDACTED] was selected as the system solution in September 2010. In addition, OIG personnel were invited to a meeting in January 2011, prior to the initiation of this review, where FS personnel stated [REDACTED] had been selected as the system solution with a "go-live" date of April 1, 2011. We also reviewed ARB documentation, including e-mail communication dated December 2011, which stated the project needed to be scoped "really fast" because ". . . it sounds like they are actually ready to implement." Furthermore, project documentation descriptions and titles throughout the life of the project indicated [REDACTED] had been selected as the system solution when documentation was submitted to the ARB in December 2010. Regarding TVA's point about project sponsor communication, we did not state the project sponsor did not interact or communicate with the project team during the project nor was that our intent.

Rather, we stated there was no documentation that business need or expectations for implementing a new expense management system were communicated by the project sponsor to the project team.

- The information omitted from the report finding related to the validation of assumptions. While it is true we received several estimates for upgrading the legacy systems, we discussed in the draft report the estimate obtained prior to the September 2010 decision to implement [REDACTED] because that was the operative estimate at the time the decision was made. The additional estimates were dated February and March 2011. We have clarified this in the final report and included the subsequent estimates for context. In addition, the identified needs that could not be met by the legacy systems were not included in the report verbiage because these were not contained in the requirements used to determine the initial estimate for upgrading the legacy systems. With regard to the evaluation of the system by key management staff, it is our understanding this occurred after the September 2010 system selection.
- The use of the word “assumptions” to describe the information provided by Supply Chain related to [REDACTED] ownership. We agreed and revised the verbiage on page 6.
- The characterization of the finding related to the evaluation of alternatives because it needed further clarification. To further clarify, alternatives were not adequately evaluated--a list of requirements should be documented and system alternatives should be compared to the list of requirements prior to system selection. We question whether the evaluation of costs should have been undertaken since we were provided no documentation that comparison of each system to a set list of requirements was performed. If systems had been compared to the requirements, there may have been no need to evaluate the costs associated with upgrading legacy systems or implementing systems other than [REDACTED]. For example, single sign-on capability and external access were requirements critical to the expense management project according to your response; however, the legacy system could not support those requirements.
- The description of the finding related to project approval and establishment of a budget because (1) the decision to implement [REDACTED] occurred in April 2011 when approval was obtained from the Chief Information Officer and (2) emergent work was not contemplated in the FY 2011 budget. The statement that no evidence of the enhancements was provided to IT is not considered to be inconsistent with the ARB submission evidence. IS-SPP-PO10, Manage IT Projects, states projects are submitted to the ARB for project approval. Enhancements, defined as software and infrastructure changes in IT-SPP-12.09, Manage Changes, are to be logged into the software change service system or with the [REDACTED] Service Desk. We were provided no evidence, as stated in the report, that enhancements were communicated to IT prior to the September 2010 decision. Furthermore, we do not consider the implementation of [REDACTED] as an enhancement to

the existing [REDACTED] system due to the effects on existing systems, business processes, and policies. With regard to funding, project management policies state it is the responsibility of the project sponsor to (1) identify the business need and secure funding for the project as well as (2) ensure projects are approved. TVA project management policies define various stages within a project, including the study and engineering, detailed design, and implementation and closure phases. Each of these phases is required to have management approval in accordance with the policies. This approval is to be documented in the project justification system or its replacement system, [REDACTED], depending on the date the phase was initiated. Furthermore, if approval is sought for an emergent, nonfunded project, the strategic business unit is to reprioritize projects and verify current funding allocation is maintained prior to seeking approval for the project.

- The description that the decision to implement [REDACTED] was made in a silo because discussions were held between organizations to discuss the implementation of [REDACTED] and the HR system. Discussions regarding [REDACTED] and the HR system implementation occurred after the selection of the system solution in September 2010. During the review, we asked for all documentation related to the [REDACTED] project, specifically, documents related to the business decision. We were provided access to SharePoint and were told [REDACTED] documents resided there. We also made multiple requests for meeting minutes associated with the [REDACTED] project. None of the documentation provided contained discussions about [REDACTED] and the HR system implementation occurring between the Chief Information Officer and the People and Performance Senior Vice President.

APPENDIX A
[REDACTED]

June 15, 2012

Robert E. Martin, ET 3C-K

RESPONSE TO REQUEST FOR COMMENTS – DRAFT AUDIT 2011-13945 – [redacted]

Our response to your request for comments regarding the findings of the subject draft report is attached. Please let us know if your staff has any concerns with TVA's response.

We would like to thank Lisa Hammer and her audit team for their professionalism and cooperation in conducting this audit. If you have any questions, please contact Denise Jones at (865) 632-4511.

Diane Wear

Diane T. Wear
Vice President & Controller
WT 4B-K

Daniel A. Traynor

Daniel A. Traynor
SVP & Chief Information Officer
SP 3A-C

cc (Attachment):
Andrea S. Brackett, WT 5D-K
David M. Frankenberg, WT 4D-K
Michael B. Fussell, WT 9B-K
Joseph J. Hoagland, WT 7B-K
Robert Irvin, WT 9C-K
Charles H. McFall, Jr., LP 3D-C
Anthony D. Smith, WT 5D-K
John M. Thomas III, MR 6D-C
Robert B. Wells, WT 9B-K
OIG File No. 2011-13945

[redacted]

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[redacted] Implementation
Response to Request for Comments

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General		
Page	**Draft Report Section**	**Comments**
i	Executive Summary	The CEO did not ask Financial Services to replace existing cards with one card to maximize credit card rebates. The intent was to reduce the number of outstanding cards and decrease risk exposure. Maximizing credit card rebates was an additional benefit that resulted from consolidating cards.
3	Findings	It is our understanding that the U.S. Securities & Exchange Commission interprets the phrase "management override of controls" in the third sentence to mean fraud has occurred. While Management agrees that adherence to TVA's project management policies could be improved, we respectfully request the phrase "due to management override of controls" be removed as there was no fraudulent activity.
3	Findings - Business Need Not Defined	Management disagrees with this finding. The finding states that "... [redacted] was selected…in September 2010." The final decision to implement [redacted] was not made until April 2011. A project summary outlining the business need was submitted to the Architectural Review Board (ARB) in December 2010, and an initial project charter was drafted in January 2011. Regarding the comments on lack of project sponsor involvement, significant email and meeting evidence is available of project sponsor interaction with the project team throughout the [redacted] effort.
4	Findings - Verifiable Assumptions Should Have Been Validated or Better Estimated	Management agrees that some assumptions could have been better validated. However, significant information was provided to the OIG that is not included in this finding. • First, the comparison of costs to implement [redacted] vs. upgrading existing systems does not include later estimates for upgrading the legacy systems that are significantly higher than indicated in the report ($60K vs. $346K). • Second, the comparison does not reflect identified needs that could not be met by the legacy systems, such as external access and single sign-on capability, which were critical to the project. • Third, contrary to the report's statement, key administrative staff outside of Financial Services, People & Performance, and IT evaluated [redacted] in a hands-on environment and provided input on requirements to meet TVA's administrative needs.
6	Findings - Verifiable Assumptions Should Have Been Validated or Better Estimated: Ownership of iExpense	Management agrees with the wording in the first paragraph but respectfully requests the word "assumption" be replaced with "understanding" as the decision was based on actual information received from Supply Chain.
7	Findings - Alternative Solutions Not Adequately Evaluated	Additional clarification on this finding is needed. The lead sentence states that alternative solutions were not adequately evaluated. The same paragraph later states that "…we question whether the evaluation process for the alternative solutions was necessary…". The last paragraph in this section indicates that in March 2011 IT evaluated options other than [redacted] and again in September 2011

[redacted]

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General		
Page	**Draft Report Section**	**Comments**
		reevaluated using another solution. In both instances, [redacted] was determined to be the least costly with the most benefit choice to TVA.
8	Findings - Project Approval Not Obtained and Budget Not Established	Management disagrees with this finding. As stated in the report, the work to implement iExpense was initially considered an "enhancement" to the existing [redacted]. As previously stated, the planned work effort was submitted to the ARB in December 2010, well ahead of the decision to implement [redacted] in April 2011. The statement "…no evidence the enhancement was communicated to IT…" is not consistent with the ARB submission evidence. This emergent work effort was not contemplated in the FY 2011 budget, so funding was sought from other sources within the approved Financial Services budget. The effort was coordinated with and approved by the Chief Financial Officer. Further coordination and approval was obtained from the Chief Information Officer in April 2011. As additional analysis and cost estimates were developed, the ability to fund the work from the FY 2011 budget was not an option. The decision to delay work until FY 2012 was made. Financial Services initially included funding for [redacted] in their FY 2012 budget. During this same time period, Information Technology began working with other TVA organizations to consolidate planned IT spending within the IT budget. The funding consolidation was complete in November 2011, and project information for [redacted] was entered into [redacted] in December 2011.
10	Findings - Business Conditions Not Adequately Assessed	Management agrees that better assessment of business conditions could have occurred. However, management disagrees that "…the decision to implement [redacted] was made in a silo." Meetings were held with the CIO and Senior Vice President of People & Performance to discuss [redacted] and the Human Resources system implementation. The IT project manager for the HR system implementation assisted with bringing [redacted] to the ARB in December 2010. The HR project team also evaluated alternative travel/expense reimbursement modules during their vendor evaluations in November 2011 to ensure continued pursuit of [redacted] was the best option for TVA.
11	Conclusion	It is our understanding that the U.S. Securities & Exchange Commission interprets the phrase "management override of controls" in the first sentence to mean fraud has occurred. While Management agrees that adherence to TVA's project management policies could be improved, we respectfully request the phrase "due to management override of controls" be removed as there was no fraudulent activity.

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	Recommendation	Management Comments
1	We recommend the VP and Controller ensure project management policies are followed with TVA's mission in mind by communicating those policies to individuals within the organization and stressing the importance of (1) adequately defining the business need for a project prior to selecting the solution, (2) validating assumptions and evaluating the business conditions and alternative solutions, and (3) determining project budget limits and obtaining project approval	Management agrees.

[redacted]