September 28, 2012

Diane T. Wear, WT 4B-K

REQUEST FOR NOTIFICATION OF PLANNED ACTIONS – INSPECTION 2012-14531 – COMPLETION OF POWERPLANT'S PROJECT/PORTFOLIO MANAGEMENT FUNCTION

Because of the importance of successful capital project management, and in light of recent capital project cost overruns and schedule delays, the Office of the Inspector General (OIG) initiated a review of Tennessee Valley Authority's (TVA) capital project management. The objective of our work was to determine whether the Project/Portfolio Management (PPM) function of PowerPlant meets the needs of the strategic business units (SBU).[1]

TVA achieved some project and portfolio management capability with the new system, but considerable opportunity for improvement exists. Specifically, as a result of our review, we identified (1) the PowerPlant PPM tools do not currently meet all needs identified by the SBUs, (2) users feel they have not been adequately trained on some functions of the system, and (3) communication of defects that have been resolved would benefit users.

We recommend the Vice President and Controller (1) consider implementing additional project management functionality available in the PowerPlant system or purchasing another system to provide a PPM tool to more efficiently and effectively manage TVA's capital projects, (2) complete additional PowerPlant training as planned, and (3) develop a strategy for communicating system changes, upgrades, and modifications.

TVA Management generally agreed with our findings and recommendations.

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[1] The original objective was to evaluate cost and schedule performance on capital projects. However, data inaccuracies and other issues made it impossible to complete the original objective timely and cost effectively. Specifically, we found the capital projects information converted from the old system into the current capital project management system, PowerPlant, was inaccurate or incomplete. The previous system, Project Justification System (PJS), did not track projects in phases, so there was no way to identify the definitive estimate in the system in order to determine if the projects were completed on time and within budget. Also, PJS did not contain a mechanism to close a project upon completion, so most projects converted into PowerPlant in an open status even though the projects were complete. We could not obtain an accurate sample, in a timely manner, because some projects that should have been included in our population were still in open status, and the projects that had been closed did not have the actual closure date. As a result, we decided not to complete the original objective.

BACKGROUND

According to TVA's President and Chief Executive Officer, "Capital projects are major investments with long-term value, everything from transmission lines to fossil plant scrubbers to steam generators for nuclear plants. Completing these projects in the time we have planned and for the amount we have budgeted is a huge challenge and responsibility. But failing to hit these targets can cost TVA money and that can lead to higher electricity prices."

From 2009 to 2011, TVA spent a total of $6.2 billion on construction expenditures. A historic capital projects analysis performed by TVA's Compliance group in 2011 determined that in the last 5 years, on projects greater than $8 million, only 38 percent came in on time and on budget. Due to the focus on rates in 2012, and since getting the most for TVA's money is critical to keeping TVA's electric rates competitive, TVA began a Capital Productivity Initiative to help define and prioritize the tools, processes, training, and actions to make sure TVA is getting the most from its capital dollars.

TVA Standard Programs and Processes (SPP) 19.3, Project Justification Process, defines the process for planning, prioritization, review, approval, evaluation, monitoring, and closure of Capital and Operating and Maintenance Projects. SPP 19.3 requires each strategic business unit to have a process for (1) forecasting project costs and schedules and (2) identifying changes to a project's cost, schedule, scope, and benefits for those projects in the authorized project plan.

SPP 19.3 required each project to be entered into PowerPlant, which serves as the official database containing supporting project data and project approval status. PowerPlant replaced TVA's PJS on March 7, 2011, at a cost of about $7 million. PowerPlant was implemented to replace the assets module within the Enterprise Financial Management System,[2] while also providing the functionality to centralize project and portfolio management. However, as discussed below, the PPM module has additional functionality beyond the currently implemented features that could improve TVA's project and portfolio management.

OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of our work was to determine whether the PPM function of PowerPlant meets the needs of the SBUs. In order to determine whether the PPM function of PowerPlant meets the SBUs needs, we:

- Interviewed Portfolio and Project Managers and other users of the PowerPlant system.

- Identified and reviewed relevant policies and procedures related to TVA's capital project management.

- Reviewed PowerPlant project documentation.

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[2]   Enterprise Financial Management System integrates TVA's financial systems, including the general ledger, accounts receivable, and treasury and cash management.

This review was conducted in accordance with *Quality Standards for Inspection and Evaluation.*

FINDINGS

Our review identified issues with the PPM function in the PowerPlant system. Specifically, (1) the PowerPlant PPM tools do not currently meet all needs identified by the SBUs, (2) users feel they have not been adequately trained on some functions of the system, and (3) communication of defects that have been resolved would benefit users.

Through our interviews with Portfolio and Project Managers, we received feedback related to the PPM function of PowerPlant. Portfolio Managers monitor various aspects of project performance for projects in their strategic business unit, while Project Managers are responsible for the overall planning and execution of assigned projects. According to the project justification form for the PowerPlant project, the reason for changing from PJS to PowerPlant included project budgeting and forecasting. The scope of the project included standardizing portfolio management functionality and centralizing project portfolio management processes, including:

- Scratch padding.[3]

- Project initiation.

- Project prioritization.

- Analysis and selection.

- Standardized workflow for authorization.

- Project metrics.

- Project cost and estimate reporting, including actuals to budget.

According to the sponsors of the PowerPlant project, the fixed assets module was the priority of the project. The PPM module in PowerPlant provides project and portfolio management functions not available in PJS like (1) automated approval workflow, (2) project initiation, and (3) project closure.

However, the PowerPlant tools do not currently meet all needs identified by the SBUs. Specifically, the reporting, forecasting, data monitoring, and portfolio prioritization functions need changes and customization to provide a more effective solution to project management. Part of the problem description on the project justification form states that project cost versus budget information is very difficult to assimilate, and there is a need for flexible and powerful project reporting (e.g., estimates to actuals and project performance). According to TVA's plan for the PPM function in PowerPlant, the system " . . . has a powerful reporting tool, making available many standard reports, giving users the ability to modify existing reports and saving them, and allowing the user to build reports from scratch." However, according to a document of identified defects compiled by a group of

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[3]   Scratch Padding is the tool for creation and development of conceptual projects. The detailed estimates are developed here, along with updated economic indicators to proceed for approval.

PowerPlant users, they do not have access to report writing capabilities, they have not been trained on queries or reporting, and the canned reporting functionality is based on calendar year rather than fiscal year. This creates inefficiencies because reports have to be manually developed over and over again. Additionally, there is some data that is unavailable through the current reporting tools.

PowerPlant provides many opportunities for efficiency and direct benefits to the PPM process. However, according to several Portfolio Managers, because PowerPlant does not provide the tools for effectively managing projects, they continue to use Excel spreadsheets or other project management software to manage their projects. This creates repetition in dual data entry into multiple systems and spreadsheets.

In 2011, a user group began compiling a list of identified issues with PowerPlant. The list included a total of 96 issues, with 19 of urgent priority and 29 of high priority. As of July 2012, 8 urgent priority issues and 15 high priority issues remain. Several issues related to the need for further instruction or training in using the system. TVA is targeting early 2013 for classroom- or computer-based training related to queries and reporting. The user group formed after implementation of the system met throughout 2011 but disbanded after the reorganization in early 2012, due to lack of funding and lack of progress made on the system.

In March 2012, Generation Construction provided $75,000 for consultants to work on some of the identified issues. Several system reports based on fiscal year were added, and the forecasting function was completed. The reports were put into production in May and communicated to users in July. However, the rollout of the forecasting function is still in the process of being determined. While TVA has recently resolved some issues in the PowerPlant system, there is still an opportunity to provide the full benefits available in the PowerPlant system and to communicate the work being done to users. Several Portfolio or Project Managers interviewed did not feel adequate progress was being made on the system and the issues they had raised.

RECOMMENDATIONS

The OIG recommends the Vice President and Controller (1) consider implementing additional project management functionality available in the PowerPlant system or purchasing another system to provide a PPM tool to more efficiently and effectively manage TVA's capital projects, (2) complete additional PowerPlant training as planned, and (3) develop a strategy for communicating system changes, upgrades, and modifications.

TVA Management's Comments – Management provided some clarifying comments regarding the report. In general, management agreed with the findings and recommendations in the report. See the Appendix for management's complete response.

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Diane T. Wear
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Your comments to the draft report have been incorporated. Please advise us of your planned actions in response to our recommendations within 60 days of the date of this report. Information contained in this report may be subject to public disclosure. Please advise us of any sensitive information in this report which you recommend be withheld.

If you have any questions or wish to discuss our observations, please contact Lindsay J. Denny, Auditor, at (865) 633-7349 or Greg Stinson, Director, Evaluations, at (865) 633-7367. We appreciate the courtesy and cooperation received from your staff during this review.

Robert E Martin

Robert E. Martin
Assistant Inspector General
  (Audits and Evaluations)
ET 3C-K

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Attachment
cc (Attachment):
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    OIG File No. 2012-14531

Tennessee Valley Authority

TVA

September 27, 2012

Robert E. Martin, ET 3C-K

RESPONSE TO REQUEST FOR COMMENTS – DRAFT INSPECTION 2012-14531 – COMPLETION OF POWERPLANT'S PROJECT/PORTFOLIO MANAGEMENT FUNCTION

As noted in the report, the primary purpose of the PowerPlant implementation was to implement a fixed asset system that would meet all regulatory reporting requirements for TVA. PowerPlant was selected because it could meet those requirements and have future potential for more project management capabilities. PowerPlant is commonly used in the utility industry, along with other project management tools, because one single tool generally cannot meet all the needs of all parties.

TVA went live with PowerPlant in March 2011 as developed because the fixed asset portion of the system was fully functional and the PJS module was functional. We realized that we could build out additional capabilities of the system in the future as we further refined our processes. As we have learned in the project management arena, it is best practice to fully define processes and procedures before implementing a technology tool. Otherwise, inefficient processes can be built into an automated system.

Also as noted in the report, TVA already has an effective continuous improvement program in place for PPM. This program not only existed in advance of the inspection work, but also provided the basis for many of the reported observations. As noted, TVA has successfully remediated over half of the identified issues in the program's first year. The report also recognizes that TVA had already taken actions to improve reporting and enhance user training. Because of TVA's commitment to the continuous improvement of PPM and a proven record of identifying and remediating system issues, we are comfortable with the recommendations in the report.

We would like to thank Greg Stinson and his team for their professionalism and cooperation in conducting this inspection. If you have any questions, please contact me at (865) 632-2075.

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