



Memorandum from the Office of the Inspector General

April 9, 2010

William R. McCollum, Jr., LP 6A-C

REQUEST FOR FINAL ACTION – AUDIT 2009-12291-01 – REVIEW OF POSTPONED AND CANCELLED CAPITAL PROJECTS – NUCLEAR POWER GROUP

Attached is the subject final report for your review and final action. Planned actions addressing the findings in this report were provided during the review and incorporated in the report. Please notify us within one year from the date of this memorandum when final action is complete.

If you have any questions, please contact Amy R. Rush, Senior Auditor, at (865) 633-7361 or Lisa H. Hammer, Director, Financial and 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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Attachment

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OIG File No. 2009-12291-01



Office of the Inspector General

Audit Report

To the Chief Operating Officer

REVIEW OF POSTPONED AND CANCELLED CAPITAL PROJECTS – NUCLEAR POWER GROUP

Audit Team

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Audit 2009-12291-01

April 9, 2010

TABLE OF CONTENTS

EXECUTIVE SUMMARY i

BACKGROUND..... 1

OBJECTIVES, SCOPE, AND METHODOLOGY 3

FINDINGS 4

 APPROVAL OF PROJECTS5

 COMMUNICATION OF PROJECT STATUS5

 MONITORING OF PROJECTS 7

RECOMMENDATIONS 9

EXECUTIVE SUMMARY

As part of our annual audit plan, we reviewed the process for postponing and cancelling nuclear capital projects. Our audit objectives were to determine whether fiscal years 2007 and 2008 project postponements and cancellations were (1) properly approved, (2) effectively communicated, and (3) monitored to prevent inappropriate charges.

Our review specifically focused on the processes for Nuclear Power Group (NPG), Power System Operations, Fossil Power Group, and River Operations. Due to the unique aspects of each of these organizations, we will issue a separate report on each organization. This report addresses the process for the NPG.

Based on our review, we determined that NPG's postponed and cancelled projects were approved by the appropriate levels of authority, contained a capital classification designated by Fixed Asset Accounting (FAA), and that justifications for postponing and/or cancelling projects were valid.

However, we noted control weaknesses that could allow business units to manipulate project costs in order to meet budget goals. Specifically, communication and monitoring controls were not adequately designed to mitigate the risk that project costs were (1) appropriately and accurately charged to the projects, (2) appropriately classified as capital costs rather than operations and maintenance (O&M) costs, and (3) accurately and timely communicated for recording on the financial statements. We determined:

- Communication by NPG to FAA of one project cancellation occurred prior to the approval of that cancellation.
- One project cancellation was not communicated to FAA within the required time frame.
- No reviews independent of NPG project management were performed to determine whether costs were appropriately and accurately charged to projects.
- No criteria existed defining the process and requirement for (1) allocating capital and O&M costs to a project, (2) allocating costs among projects, and (3) borrowing funds from other projects.
- Project documentation was not retained in accordance with retention guidelines.

We recommended the Chief Nuclear Officer and Executive Vice President, Nuclear Generation, in conjunction with other organizations:

- Develop and implement a process for approving project cancellations prior to their communication to FAA and Business Services.

- Develop and implement criteria related to project cancellations including time requirements for communication of project cancellations to FAA and Business Services.
- Establish a specified location for retaining project documentation, including Change Control Board and Project Approval Board meeting minutes as well as business plans, and ensure that documentation is retained per the retention guidelines.
- Implement an independent review process to monitor project costs to determine whether costs charged to the project are appropriate and consistent with the project's accounting classification.
- Develop and implement criteria to define the process and requirements for the (1) allocation of capital and O&M costs to a project, (2) allocation of costs among projects, and (3) borrowing of funds from other projects.

We communicated our findings and recommendations to NPG personnel, who provided informal comments and planned actions addressing these findings. Their planned actions are incorporated within this report.

BACKGROUND

Each year, the Tennessee Valley Authority (TVA) initiates a wide variety of capital and operations and maintenance (O&M) projects. In that regard, TVA's project justification process is designed to ensure that such projects are aligned with TVA's vision, goals, and strategic plan objectives. As defined by TVA's Standard Programs and Processes (SPP) 2.1: Project Justification Process,¹ the process consists of identifying project initiatives, coordinating and completing project reviews, receiving funding, approving projects, and executing projects which include project postponement, cancellation, and closure. Projects are initiated, owned, managed, and executed by the respective Strategic Business Unit (SBU).

According to TVA's Capitalization policy, projects are classified as capital if they result in the creation of new assets, the replacement of existing assets, or the removal of existing assets. Projects are considered O&M if they repair, restore, test, inspect, or assess existing assets. In addition, any capital project that is cancelled should be reclassified as an O&M project and project costs expensed. Fixed Asset Accounting (FAA) personnel are responsible for determining the proper accounting classification for all projects under consideration for capitalization.

Capital projects greater than \$250,000 are required to be entered as stand-alone projects in the Project Justification System (PJS), which serves as the official database containing project data and project approval status.² Depending on the cost and type of the project, there can be multiple levels of project approval. Projects less than or equal to \$250,000 are grouped together and entered into the PJS as a "bucket." Projects are classified as one of three categories:

- Strategic – Projects initiated or sanctioned by the Board or management with costs greater than \$8 million.
- Base – Projects specific to an SBU to maintain its mission with costs less than or equal to \$8 million.
- Discretionary – Projects classified as Economic/Revenue, Capacity Growth, and Reimbursable.

Occasionally projects may require a revision to change the project scope or priority and may need to be suspended, accelerated, or deferred.³ When such a change occurs, the respective SBU must ensure the project change process is

¹ During the review, SPP-2.1 was being revised to update the project authorization matrix. We used the latest approved revision for this testing.

² According to Chief Financial Officer (CFO) personnel, PJS is a stand-alone application and is not linked to TVA's general ledger application.

³ According to CFO personnel, project postponements or deferrals include projects where the in-service date (ISD) has been extended past the original planned ISD. During the period of postponement, costs may still be incurred, and work may still be performed on the project.

followed and adequately documented. Specifically, the SBU is required to (1) initiate a revised Project Justification (PJ) form with an explanation for the change and identification of the impacts on the project cost, schedule, scope, and/or benefits, (2) coordinate appropriate reviews for revisions to projects, and (3) update the Five-Year Project Plan.⁴

Depending on the project cost, projects are required to have various levels of approval. Nuclear Power Group (NPG) has a Change Control Board (CCB) for each site and a Project Approval Board (PAB), which are responsible for reviewing and approving projects and project revisions. The CCB consists of the Site Vice President (VP) or Plant Manager, Site Project Manager, various other project management including the Site Engineering and Support Manager, Maintenance and Modifications Manager, Operations Manager, Modifications Manager, Design Engineering Manager, System Engineering Manager, Radcon Superintendent, Outage and Scheduling Manager, a Business Services representative, and the Assistant Plant Manager. The CCB is responsible for approving all projects, project placeholders,⁵ and revisions to projects. The PAB consists of the Senior VP, Nuclear Projects Manager, NPG VPs, and the Business and Projects Services Manager. The PAB is responsible for approving strategic projects and base and discretionary projects, including project revisions, and those having revisions greater than \$2 million. In addition, both CCB and PAB have administrator roles responsible for the tracking of project approval status, preparing meeting minutes, and publishing the minutes for the members.

Once projects are approved, a project manager is responsible for ensuring the project is completed to implement the approved scope at the lowest possible cost within the approved budget and on schedule. A Project Control Specialist (PCS) is responsible for working with the project managers to monitor project costs and to ensure that approval meetings are held, appropriate project approvals are obtained, and project cost codes are initiated within the general ledger system.

We determined there were a total of 589 postponed capital projects and 87 cancelled capital projects in fiscal years (FY) 2007 and 2008, as shown in Table 1. Of those totals, NPG had 80 postponed and 3 cancelled projects. As of FY 2008, NPG projects deemed as postponed had a total requested budget and total expenditures of approximately \$2.6 billion and \$134 million, respectively. NPG-cancelled projects had a total requested budget of \$8.5 million and no total expenditures as of FY 2008.⁶

⁴ The Five-Year Project Plan is a "living" document comprising the current list of projects maintained as the SBU's funded and prioritized projects currently being implemented or planning to be implemented.

⁵ Projects identified in the SBU Performance Plans and Long-Range Financial Plans that require funding beyond the Five-Year Project Plan.

⁶ Requested budget totals were obtained from PJS project documentation, and expenditures were obtained from FAA. These totals do not include "bucket" projects.

	Postponed Projects	Cancelled Projects
Fossil Power Group	232 79	
Nuclear Power Group	80	3
Power Supply Operations	233 4	
River Operations	32 1	
Other	12 0	
Total	589	87

Table 1

OBJECTIVES, SCOPE, AND METHODOLOGY

As part of our annual audit plan, we reviewed the process for postponing and cancelling nuclear capital projects. Our audit objectives were to determine whether FYs 2007 and 2008 project postponements and cancellations were (1) properly approved, (2) effectively communicated, and (3) monitored to prevent inappropriate charges. Approval, communication, and monitoring of projects are essential for ensuring that TVA's project portfolio provides the maximum benefit to meet TVA's goals and strategic plan.

Our review specifically focused on the processes for NPG, Power System Operations, Fossil Power Group, and River Operations. Due to the unique aspects of each of these organizations, we will issue a separate report on each organization. This report focuses on the processes for NPG. To achieve our objectives, we:

- Reviewed relevant policies and procedures governing the approval, communication, and monitoring of NPG capital projects, including SPP-2.1: Project Justification Process, and TVA Nuclear Business Practice (BP) 205: Project Justification and Implementation Process.
- Interviewed NPG Project Management including PCS personnel, the Project Finance Specialist responsible for the PJS, NPG Controller personnel, and FAA personnel.
- Identified 80 postponed⁷ and 3 cancelled nuclear projects in FYs 2007 and 2008.
- Selected a statistical sample⁸ of 24 postponed projects and a judgmental sample of 4 postponed projects and 1 cancelled project. Specifically, we selected 7 postponed and 1 cancelled Browns Ferry Nuclear (BFN) projects, 11 postponed Sequoyah Nuclear (SQN) projects, and 10 postponed Watts Bar Nuclear (WBN) projects.

⁷ Postponed projects are defined as projects having an in-service date deferred to a later date.

⁸ For projects selected in the samples, we reviewed all revisions within scope for the project.

- Obtained and reviewed project documentation including PJ forms, Five-Year Project Plans, Capital Reporting Summaries, CCB meeting minutes, PAB approval packages, and year-to-date cost information.

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 and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Although we did not test for compliance with laws and regulations, nothing came to our attention during the audit that indicated noncompliance with laws and regulations.

FINDINGS

We determined the postponed and cancelled capital projects reviewed were approved by the appropriate levels of authority, contained a capital classification designated by FAA, and that justifications for postponing and/or cancelling projects were valid.

However, we noted control weaknesses that could allow business units to manipulate project costs in order to meet budget goals. Specifically, communication and monitoring controls were not adequately designed to mitigate the risk that project costs were (1) appropriately and accurately charged to the projects, (2) appropriately classified as capital costs rather than O&M costs, and (3) accurately and timely communicated for recording on the financial statements. We determined:

- Communication by NPG to FAA of one project cancellation occurred prior to the approval of that cancellation.
- One project cancellation was not communicated to FAA within the required time frame.
- No reviews independent of NPG project management were performed to determine whether costs were appropriately and accurately charged to projects.
- No criteria existed defining the process and requirement for (1) allocating capital and O&M costs to a project, (2) allocating costs among projects, and (3) borrowing funds from other projects.
- Project documentation was not retained in accordance with retention guidelines.

APPROVAL OF PROJECTS

According to TVA's SPP-2.1: Project Justification Process, each SBU is required to obtain approval as defined in the Project Authorization Matrix for funded projects and project revisions meeting certain criteria. Project approval is required to be documented on the PJ form. We selected a sample of 29 projects (28 postponed and 1 cancelled) and reviewed the PJS documentation for each project. We verified that all projects were approved by the appropriate groups/individuals in accordance with SPP-2.1 and contained a capital classification designated by FAA.⁹ However, we noted that one cancelled project had a cancellation date of June 1, 2007, which was six days prior to the receipt of the June 7, 2007, SBU approval for cancellation and approximately six months prior to the receipt of the Project Management Council cancellation approval dated December 12, 2007. According to NPG project management personnel, NPG's BP-205 is to be revised to include specific requirements and time frames for project cancellations as far as time frames for completing required forms and sequence and level of required approvals.

In addition, during our interviews with NPG project management, we noted that after projects have initially been approved, project revisions are almost always approved even if personnel are not pleased with the proposed revision.

COMMUNICATION OF PROJECT STATUS

To facilitate project tracking, project status must be communicated by NPG project management to FAA and Business Services. Specifically, projects having a cancelled status should be communicated to FAA and Business Services to ensure accuracy and timeliness of financial reporting. According to FAA process documentation and the Controller's Web site, communication of project status to FAA includes the submission of Form 4013, Capital Projects Completion/Cancellation Notice, for projects that are cancelled. Project cancellation status must also be submitted to Business Services since that organization is currently responsible for writing off project costs. However, requirements for communicating this information to FAA and/or Business Services are not specified in SPP-2.1 or BP-205.

Project status must also be communicated by NPG project management to internal project personnel to better facilitate project management. Communication of project status within the organization occurs informally with the exception of communication through CCB and PAB meeting minutes and the Five-Year Project Plan. The SBU is required per BP-205 to retain the CCB meeting minutes a minimum of two years. In addition, SPP-2.1 requires that project status be updated on the Five-Year Project Plan.

⁹ We did not test the accuracy of FAA's classification during this review. We relied on procedures performed in the Office of the Inspector General Audit 2009-12429 where no exceptions were identified in our testing of FAA financial reporting controls related to the capital classification of projects.

Communication to FAA and Business Services

We obtained project communication from FAA for the sampled cancelled project and determined that communication to FAA was not timely. According to FAA, Form 4013 projects are required to be submitted to FAA no later than ten business days after the cancellation date. We noted the one cancelled project had a cancellation date of June 1, 2007, however, Form 4013 was not sent to FAA until June 29, 2007, or 28 days after the project was cancelled. We verified there were no project costs associated with this project; therefore, it was not necessary to obtain documentation from Business Services.

According to FAA personnel, there have been instances in which a business unit submitted Form 4013 and documented that costs have been expensed. However, FAA has subsequently found that, in some cases, the costs were not expensed. As previously stated, NPG project management personnel stated NPG's BP-205 will be revised to include specific requirements and time frames for project cancellations as far as time frames for completing required forms and sequence and level of required approvals.

Communication Within NPG

We requested CCB meeting minutes for the 29 sampled projects and were not provided CCB meeting minutes for 11 projects. Seven of these projects (one BFN cancelled project; four SQN and two WBN postponed projects) were within the two-year minimum retention time frame required by BP-205. In addition, we determined that CCB meeting minutes provided for one WBN project were dated after the PAB meeting minutes provided for the same project. According to BP-205, CCB meetings are held prior to PAB meetings.

PAB meeting minutes were not provided for 14 of the sampled postponed projects. Specifically, we did not receive PAB meeting minutes for two BFN projects, five SQN projects, and seven WBN projects. We also identified two BFN projects that were not tracked on the Five-Year Project Plan. According to BFN project management:

- One project was considered part of another project which was being tracked on the Five-Year Project Plan. However, SPP-2.1 requires funded projects to be tracked on an individual basis.
- The second project was a Board-approved project which was considered an expedited project and therefore did not need to be tracked. However, according to SPP-2.1, expedited projects are required to be tracked on the Five-Year Project Plan.

NPG project management informed us that, in the future, CCB and PAB meeting minutes, as well as other project-related documentation and retention requirements, will be located in a password-protected location on the NPG shared drive.

Based on discussions with project personnel and the review of project documentation, we determined that each of the sampled projects had been postponed or cancelled for valid reasons. Reasons for postponing or cancelling projects included deferrals due to outage schedules, deferrals due to priority adjustments, and cancellation due to the lack of economic payback on the project.

MONITORING OF PROJECTS

According to TVA's Capitalization policy, FAA is responsible for determining the proper accounting classification for all projects under consideration for capitalization. According to FAA personnel, the project classification allows the SBU to charge appropriate costs related to the project as either capital or O&M, depending on the project classification. Specifically, if a project is designated as "capital," by FAA, it is the responsibility of the project manager to ensure only capital-type costs¹⁰ are capitalized. Similarly, only noncapital costs should be charged to O&M. Any capital project that is cancelled should be reclassified as an O&M project and project costs expensed.

According to the PCS at each site,¹¹ project costs are monitored by the PCS to ensure that other organizations do not erroneously charge costs to the projects. At all sites, project costs are compared to the project control budget to determine whether there are variances that require explanation. We determined there was no review performed, independent of the SBU, to verify the appropriateness of costs charged to the project. According to project management, once a project is classified as either capital or O&M, costs can be charged to a project even though the nature of those costs is not consistent with the project's accounting classification. Without detailed reviews of project costs, the NPG SBU in essence relies on its employees who charge costs to its capital projects to determine whether costs are appropriately capital or O&M.

In addition, project management informed us that cancellation of projects may be delayed because of the impact on the current year's budget. Specifically, when projects are cancelled, all project costs incurred are expensed in the current period. Furthermore, during FYs 2007 and 2008, one of the SBU's performance indicators incentivized lower overall O&M expenses. The lack of an independent review of detailed project costs could allow SBUs to manipulate project costs to achieve relevant performance goals. Specifically, without adequate oversight and review, SBUs could (1) charge true O&M costs to capital projects in an effort to reduce overall O&M expenses or (2) continue working an existing project in an effort to avoid having project costs expensed in the current year and an improved performance indicator. NPG Projects personnel stated they will work with Nuclear Business Services to develop a process for reviewing project costs to ensure costs are appropriately charged on a periodic basis.

¹⁰ Capital costs are costs incurred on the purchase of land, buildings, construction, and equipment needed to bring a project to a commercially operable status.

¹¹ The PCS position at WBN is currently vacant; however, the SQN PCS assists on an as-needed basis.

We reviewed a selection of capital costs for the sampled postponed projects and determined there were charges made to the project which could be potential O&M expenses. We identified:

- Three projects, including one BFN project and two SQN projects, contained computer hardware purchases for items, such as desktops, laptops, and monitors and computer software purchased for flowcharting and project management. According to BFN project management, the (1) IT hardware was purchased specifically to handle the significant temporary workforce involved in the preparation and execution of the project, and (2) flowcharting and project management software was purchased for the project manager who was dedicated to the project.

We were informed by NPG project management that SQN purchases included two pieces of software bought for individuals working on the project. According to NPG project management, there is no general O&M budget for project management personnel; therefore, the project short code was provided for the charges.

- One BFN project contained office supply expenses totaling approximately \$30,000. According to BFN project management, expenditures for office supplies, primarily for paper/copier supplies, were used to support the project implementation.
- One BFN project contained training and travel costs charged in FY 2007 for two individuals to attend a Large Electric Motor Users Group (LEMUG) conference. The same project was charged for the same two individuals to attend the LEMUG conference in FY 2008. According to BFN project management, the LEMUG is a users group that meets twice a year. The conference benefited the attendees since there are currently several motor replacement projects at BFN.

According to FAA personnel, items such as laptops and desktops would typically not be capitalized unless the item was purchased solely for one project. In addition, FAA personnel stated that projects having both capital and O&M costs would need to be entered separately in the current general ledger system. However, this is not included in SPP-2.1, BP-205, or TVA's Capitalization policy.

During the review of project costs, we noted there were two practices occurring for which there is no criterion. Specifically, we identified:

- Three BFN projects in which travel costs were split among projects. According to project management, if there are common costs that need to be allocated among projects, then a determination is made, on an ad hoc basis, as to the percentage of costs to be charged to each project.
- One SQN project in which funds were borrowed from a "bucket" project to be replenished at a later date with project savings or salvage credits. Based on interviews with SBU personnel, we noted there were differing practices with

regard to borrowing funds from bucket projects. According to project management at BFN, funding for bucket projects cannot be used to fund ongoing capital projects, while project management at SQN has the flexibility to move funds among projects as needed based on the needs of the plant as long as annual budgets are maintained. We were informed this has been a common practice for the past 20 years. According to project management at WBN, there is discretion to move funds as necessary; however, it is up to the CCB and site VP to approve the funding.

The lack of criterion related to the distribution of project costs among projects could allow the SBU to manipulate project costs to meet budget goals. In addition, the lack of criterion related to borrowing funds from other projects and later replenishing those funds could cause inconsistency in the practices at each of the sites. According to NPG project management, NPG Projects will obtain guidance from Fixed Assets on cost allocations between O&M and capital projects and incorporate guidance in BP-205 or related Project procedures. Also, allocation of costs between projects and borrowing funds from other projects will be addressed.

RECOMMENDATIONS

We recommended the Chief Nuclear Officer and Executive Vice President, Nuclear Generation, in conjunction with other organizations:

- Develop and implement a process for approving project cancellations prior to their communication to FAA and Business Services.
- Develop and implement criteria related to project cancellations including time requirements for communication of project cancellations to FAA and Business Services.
- Establish a specified location for retaining project documentation, including Change Control Board and Project Approval Board meeting minutes as well as business plans, and ensure that documentation is retained per the retention guidelines.
- Implement an independent review process to monitor project costs to determine whether costs charged to the project are appropriate and consistent with the project's accounting classification.
- Develop and implement criteria to define the process and requirements for the (1) allocation of capital and O&M costs to a project, (2) allocation of costs among projects, and (3) borrowing of funds from other projects.

We communicated our findings and recommendations to NPG personnel, who provided informal comments and planned actions addressing these findings. Their planned actions are incorporated within this report.