



# Memorandum

DATE: May 15, 2006

Audit Report Number: OAS-L-06-14

REPLY TO

ATTN OF: IG-34 (A05TG027)

SUBJECT: Report on Audit of "The Department's Development and Implementation of the Corporate Human Resource Information System"

TO: Chief Financial Officer, CF-1  
Chief Human Capital Officer, HR-1  
Chief Information Officer, IM-1

## INTRODUCTION AND OBJECTIVE

The Department of Energy (Department) began the development of its Corporate Human Resource Information System (CHRIS) in 1996. It is the official human resource system of record for the Department's Federal employees. CHRIS consists of several components, including the Human Resource Management System, which maintains training and personnel records; Employee Self Service, which provides employees with web-based access to personnel and payroll data and permits them to update certain personal information; and QuickHire, which automates the recruitment and hiring process.

In February 2001, the Office of Inspector General reported, in *The U.S. Department of Energy's Corporate Human Resource Information System* (DOE/IG-0494), that CHRIS had not satisfied all Federal and Departmental requirements and had not met certain Departmental goals. Specifically, the audit showed that the processes for tracking development and implementation costs were inadequate and that plans to reengineer certain human resource processes and eliminate redundant systems had not been met. We conducted this follow-up audit to determine whether CHRIS delivered planned benefits and addressed original, defined requirements.

## CONCLUSION AND OBSERVATIONS

The Department's implementation of CHRIS achieved many of its original, defined requirements to automate human resource work processes, including enhancing operational efficiencies, reducing paperwork, and providing information necessary to help make sound human resource decisions. In addition, tests of data reliability demonstrated that information contained in CHRIS was generally accurate and up-to-date. While the project satisfied many of its original goals, it did so at a cost significantly higher than anticipated. A required post-implementation review, that may have determined the causes of the cost overruns and helped the Department apply those lessons learned to other on-going efforts, also had not been conducted.

## Development and Implementation

Costs to implement CHRIS escalated significantly beyond the project's original life-cycle cost estimate. In our report on *The U.S. Department of Energy's Corporate Human Resource Information System* (DOE/IG-0494, February 2001), we estimated that total life-cycle costs for CHRIS would exceed original estimates by 155 percent – from \$8 million to \$20.4 million through Fiscal Year (FY) 2005. However, actual costs incurred through FY 2005 were approximately \$37 million, or 360 percent higher than original estimates. The Department attributed the increase in cost, in part, to new requirements that did not exist at the time of the original cost estimate. For example, project officials indicated that requirements from the Thrift Savings Board, Congress, the Office of Personnel Management, and the President's Management Agenda necessitated adjustments to CHRIS. Management, however, was unable to provide us with a detailed breakdown of costs and we were unable to determine the exact nature of the costs associated with meeting these requirements.

Although planned and required, the Department did not evaluate the CHRIS project upon initial implementation. While the 2001 CHRIS Program Management Plan included plans to "*share the lessons learned from the development of CHRIS with others to avoid future problems in software development*," we found this was not done. As noted in DOE Manual 413.3-1, *Project Management for the Acquisition of Capital Assets*, post-implementation reviews are required for major information systems. The process includes revisiting the original project planning documentation and documenting lessons learned upon implementation of the system. Evaluating the project upon implementation helps management identify both accomplishments and shortcomings in achieving project goals.

## Project and Cost Management

Cost and implementation issues were attributable, at least in part, to the inconsistent application of sound project life-cycle management techniques. In particular, responsibility for project management shifted between program elements on several occasions, original cost estimates were inadequate, and plans, estimates, and baselines were not modified to address development changes.

There was a lack of continuity in project management due to the transfer of project ownership between several program offices and corresponding changes in project managers. The CHRIS system development effort was initiated under the ownership of the Office of Human Resources within the Office of Management and Administration in 1998 and was subsequently transferred to the Office of the Chief Information Officer (CIO). The Office of the Chief Financial Officer, Office of Corporate Information Systems, assumed ownership of the project in January 2002. Generally accepted best practices cite continuity of project leadership and management as critical for a successful outcome. The CIO Council's 1999 report on *Best IT Practices in the Federal Government* noted that "the extent to which the same senior manager is involved in all phases of the project significantly increases the prospect for success, particularly those involving multi-year system development activities."

At least one other factor impacting the CHRIS project budget overruns was the failure to prepare accurate and well-supported budget estimates during the project planning phase. As we determined and as affirmed by the current project director, original project cost estimates were significantly understated because they did not fully consider the life-cycle costs of the project. In fact, planning and acquisitions costs alone were \$24 million through FY 2005 and exceeded the entire original life-cycle cost estimate by 200 percent. The current project director acknowledged that better estimates during the development phase could have prevented this issue.

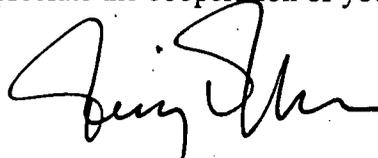
Although it concurred and committed to do so, the Department did not fully implement the recommendation contained in our 2001 report to revisit the CHRIS project and prepare an updated cost/benefit analysis. Despite changes in project scope, costs, and timelines, management did not modify project documentation during development or reestablish project baselines. While management officials did perform analyses on one component of CHRIS and on FY 2006 and out-year costs and benefits, the effort did not provide an overall picture of the project's cost/benefit or its return on investment from inception. Without such analyses, management lacked the tools necessary to closely monitor project cost, schedule and performance.

#### SUGGESTED ACTIONS

To help ensure that lessons learned during the CHRIS development are applied to on-going and future projects, we suggest that the Office of Corporate Information Systems, in conjunction with the Chief Human Capital Officer and the CIO, evaluate the lessons learned from the CHRIS system development project and reinforce valuable best practices that should be applied to future system development initiatives, to include:

1. To the extent possible, maintaining continuity of project management;
2. Developing thorough project cost estimates; and,
3. Revisiting project plans, estimates, and baselines, as major changes occur during development and/or implementation.

Since no formal recommendations are being made in this report, a formal response is not required. We appreciate the cooperation of your staff during this audit.



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Audit Liaison, NE-10  
Audit Liaison, SC-32.1

## SCOPE AND METHODOLOGY

The audit was performed between January 2005 and January 2006 at Departmental Headquarters in Washington, D.C. and Germantown, Maryland; and the National Energy Technology Laboratory in Morgantown, West Virginia. We evaluated the project's goals and requirements, examined the differences in projected versus actual costs and benefits, and examined opportunities for improving future information technology project management. Additionally, we tested data accuracy by examining Fiscal Year (FY) 2005 personnel information.

To accomplish our audit objective, we:

- Reviewed applicable laws and directives pertaining to system development and project management, including Departmental Order 413.3, *Program and Project Management for the Acquisition of Capital Assets* and Manual 413-3.1 *Project Management for the Acquisition of Capital Assets*.
- Reviewed several documents related to the planning and implementation of Corporate Human Resource Information System (CHRIS), including the Strategic Information Management Project Results and Business Case Analysis and the Program Management Plan. We also reviewed current cost information, including the CHRIS Exhibit 300 information submitted to Office of Management and Budget.
- Reviewed the Department's overall post-implementation guidance and practices throughout the organization.
- Held discussions with CHRIS project officials and officials from various Departmental offices, including the Office of Management, Budget and Evaluation.
- Reviewed reports by the Office of Inspector General and the General Accounting Office.

We also evaluated the Department's implementation of the *Government Performance and Results Act* and determined that it had established performance measures for the CHRIS project. We used advanced audit techniques to assess data reliability of the CHRIS information. We obtained electronic information from CHRIS and utilized computer assisted audit techniques to identify inconsistencies. We also compared selected CHRIS data elements to source personnel files. While we initially identified some anomalies between electronic and source data, we determined that the data was sufficiently reliable for the purposes of our audit.

The evaluation was conducted in accordance with generally accepted Government auditing standards for performance audits and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy our objective. Accordingly, we assessed internal controls regarding the development and implementation of automated systems. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our evaluation.