



U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF INSPECTOR GENERAL

Catalyst for Improving the Environment

Quick Reaction Report

Lack of Project Plan Resulted in Transition and Contractor Performance Problems for the Institutional Controls Tracking System

Report No. 09-P-0128

March 25, 2009

Report Contributors

Rudolph M. Brevard
Cheryl Reid
Neven Morcos

Abbreviations

EPA	U.S. Environmental Protection Agency
IC	Institutional Controls
ICTS	Institutional Controls Tracking System
OIG	Office of Inspector General
OSRTI	Office of Superfund Remediation and Technology Innovation
SDMS	Superfund Document Management System
SMP	System Management Plan



At a Glance

Catalyst for Improving the Environment

Why We Did This Review

We performed this review in response to an anonymous hotline complaint alleging mismanagement of the Institutional Controls Tracking System (ICTS) project being developed by the Office of Superfund Remediation and Technology Innovation (OSRTI).

Background

In 2003, the U.S. Environmental Protection Agency's (EPA's) Superfund program acquired a contract to develop ICTS to make information available via the Internet. In 2005, OSRTI purchased a Task Order under a different contractor to continue ICTS development. System Life Cycle Management guidance outlines EPA's system development requirements. The procedures require that a project have a System Management Plan that serves as the primary managerial document to control, assess, and document the system.

For further information, contact our Office of Congressional, Public Affairs and Management at (202) 566-2391.

To view the full report, click on the following link:
www.epa.gov/oig/reports/2009/20090325-09-P-0128.pdf

Lack of Project Plan Resulted in Transition and Contractor Performance Problems for the Institutional Controls Tracking System

What We Found

Lack of compliance with established project management procedures resulted in transitional problems in 2005 that delayed ICTS development and negatively affected contractor performance. Although we could not substantiate the mismanagement claims alleged in the hotline complaint, the absence of key decision documents and significant turnover of key ICTS personnel could have contributed to the complainant's perception that ICTS project decisions were made in a haphazard manner. Had OSRTI documented its key decisions, as required by EPA guidance, institutional documents would have been available to answer communication and project questions that impacted the ICTS project.

In April 2006, OSRTI assigned a certified project manager to oversee ICTS development. The project manager took steps to develop a System Management Plan for ICTS and provided leadership and direction to help OSRTI overcome challenges with contractor transitions. In 2007, OSRTI merged ICTS with the Superfund Document Management System (SDMS). More work is needed to ensure that OSRTI documents its processes for overseeing system development activities and conducting quality management reviews to ensure the System Management Plan is kept current.

What We Recommend

We recommend that the Director, Office of Superfund Remediation and Technology Innovation, Office of Solid Waste and Emergency Response:

- Document procedures for overseeing development activities for the SDMS project as prescribed by EPA System Life Cycle Management guidance.
- Conduct and document a review of SDMS system documentation to ensure the document is current. If needed, direct the contractor to update the documentation.
- Create a Plan of Actions and Milestones in EPA's Automated Security Self Evaluation and Remediation Tracking system for the above two recommendations.

We met with OSRTI to discuss the report's findings. OSRTI agreed with the report's recommendations, and provided a complete corrective action plan to address the report's recommendations. OSRTI management indicated that some elements of the report did not provide the current operational status of the ICTS application or the appropriate timeframe of the weaknesses found, and we modified the report as appropriate to address management's concerns.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
INSPECTOR GENERAL

March 25, 2009

MEMORANDUM

SUBJECT: Lack of Project Plan Resulted in Transition and Contractor Performance Problems for the Institutional Controls Tracking System Report No. 09-P-0128

FROM: Rudolph M. Brevard
Director, Information Resources Management Assessments
Office of Mission Systems

Rudolph M. Brevard

TO: James Woolford
Director, Office of Superfund Remediation and Technology Innovation
Office of Solid Waste and Emergency Response

This is our report on the subject audit conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. This report represents the opinion of the OIG and does not necessarily represent the final EPA position. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The estimated cost of this report – calculated by multiplying the project's staff days by the applicable daily full cost billing rates in effect at the time – is \$155,121.

Action Required

We have closed this report in our audit tracking system based on the comments regarding corrective actions in your e-mail dated March 4, 2009. We believe the proposed actions, when implemented, will adequately address the report's findings and recommendations. Please provide updated information in EPA's Management Audit Tracking System as you complete each planned corrective action or revise any corrective actions and/or milestone dates. If you are unable to meet your planned milestones, or believe other corrective actions are warranted, please send us a memorandum stating why you are revising the milestones or why you are proposing alternative corrective actions, as required by EPA Manual 2750.

We would like to thank your staff for their cooperation. We have no objections to the further release of this report to the public. This report will be available at <http://www.epa.gov/oig>.

If you or your staff have any questions regarding this report, please contact me at (202) 566-0893 or brevard.rudy@epa.gov; or Cheryl Reid, Project Manager, at (919) 541-2256 or reid.cheryl@epa.gov.

Table of Contents

Purpose	1
Background	1
Scope and Methodology	1
Findings	2
<i>Lack of SMP Contributed to Miscommunication</i>	2
<i>Project Delays Resulted from Insufficient System Testing and Documentation</i>	3
Recommendations	4
Agency Comments and OIG Evaluation	4
Status of Recommendations and Potential Monetary Benefits	6

Appendix

A Distribution	7
-----------------------------	---

Purpose

The Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA) performed this review due to an anonymous hotline complaint that alleged mismanagement of the Institutional Controls Tracking System (ICTS) project. The ICTS was being developed by the Office of Superfund Remediation and Technology Innovation (OSRTI), within EPA's Office of Solid Waste and Emergency Response. We performed a limited review of OSRTI's management oversight processes for the development of ICTS.

Background

EPA's vision for managing Institutional Controls (IC) information is through an integrated ICTS. ICs are non-engineered measures, such as administrative and legal controls over land or resource use, which minimize human exposure to contaminants and protect the integrity of a remedy. ICs are tools used on Superfund, Brownfields, Federal Facilities, Underground Storage Tanks, and Resource Conservation and Recovery Act clean-ups. Prior to ICTS, EPA systems did not capture IC information at the level of detail to track, monitor, and distribute information to stakeholders. Also, none of EPA's systems allowed public queries and information distribution at the individual IC objective or instrument level.

In 2002, the Assistant Administrator for Solid Waste and Emergency Response announced the goal to make more hazardous site information available to the public. OSRTI began to develop ICTS to capture land use controls and present the information on the Internet. By 2004, ICTS allowed EPA regions and offices to input data into ICTS. By the end of 2004, EPA developed an IC strategy to make sure the Agency required and monitored ICs at Superfund sites. In 2005, OSRTI further developed ICTS to expand the amount of data or related data fields to make the information more useful in applying the IC strategy. In 2007, ORSTI began efforts to merge ICTS with the Superfund Document Management System (SDMS). This effort, along with plans to integrate the Comprehensive Environmental Response, Compensation, and Liability Information System with SDMS, were considered essential in EPA's plan to consolidate Superfund-related data distributed among various EPA systems.

EPA's System Life Cycle Management procedures outline EPA's system development requirements. The procedures require that a project have a System Management Plan (SMP). This plan is the main managerial document and serves as a portfolio of required documents used by system managers to control, assess, and document the system. The SMP should have a project quality assurance plan and decision papers. The project quality assurance plan provides guidance on development of products created to make sure they are substantively accurate and conform to a standard project management structure. Decision papers summarize those aspects of the analysis and decisions of a given project phase that are important to program management and requests approval to continue the project.

Scope and Methodology

We performed this audit from October 2008 through February 2009 at EPA Headquarters in Washington, DC, in accordance with generally accepted government auditing standards. These

standards require that we plan and perform the audit to obtain sufficient and appropriate evidence to provide a reasonable basis for our findings and conclusions based on the audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions.

We assessed management control processes for developing of ICTS. We reviewed contract and system documents prepared between 2003 and 2008 relevant to the hotline complaint. We also spoke with current and past ICTS managers and Office of Acquisition Management's contract officer to learn about ICTS development history and contractor performance.

We did not review whether the ICTS contractor complied with the contract provisions or safeguarded resources. Therefore, the user of this report would not be able to determine whether (1) funds awarded for ICTS work were spent according to the contract, or (2) EPA took adequate steps to safeguard resources.

We had not performed past audits of ICTS, so no follow-up was performed during this audit.

Findings

Lack of compliance with project management procedures resulted in problems that delayed ICTS development and had a negative effect on contractor performance. Although we could not substantiate the claims of mismanagement alleged in the hotline complaint, the absence of key decision documents and high turnover of key ICTS staff could have contributed to the perception that ICTS project decisions were made in a haphazard manner. Had OSRTI documented its key decisions in an SMP, as required by EPA guidance, institutional documents would have existed to communicate and answer project questions during transition of ICTS project staff.

Internal controls do not guarantee the success or prevent mismanagement of a project. However, such controls provide a means to manage the risk associated with a complex project like ICTS. Documenting key decisions on various risk factors is a key component of a project plan. Whether it is contractual risks or risks in personnel retention, documentation serves as proof of management's due diligence as stewards of resources. Office of Management and Budget Circular A-123, *Management's Responsibility for Internal Control*, states that documents for management controls and other significant events must be clear and available for examination. Without documenting key oversight decisions, management lacks information needed to ensure assigned staff is meeting responsibilities and key decisions are having the desired effect.

Lack of SMP Contributed to Miscommunication

Prior to April 2006, OSRTI had not created an SMP that included documents for management decisions that governed development of ICTS. We requested historical documents from the beginning of the ICTS project and were told by earlier ICTS managers there were none. We further learned that throughout the initial development phases of ICTS, there had been many changes in staff responsible for managing ICTS development. Changes included the assistant administrator, system owner, project manager, and contractor. These factors contributed to the transitional problems because communication channels were not kept open as staff rotated and historical documents were not available, so newly assigned project staff could know prior

decisions made. This problem could have been minimized had OSRTI documented key project decisions as they occurred and maintained the documentation in an SMP. The current project manager sent us a copy of an SMP. The project manager said that when he took over in April 2006, it was one of his early directions to the contractor to create an SMP. Although the project manager took steps to correct this issue, we found that many of the SMP documents are in draft status and OSRTI should conduct a review to ensure needed documents are current and approved.

Project Delays Resulted from Insufficient System Testing and Documentation

The ICTS project also had significant project delays when the Agency switched contractors in January 2005. OSRTI purchased a task order under EPA's existing contract, "Information Technology Solutions." OSRTI managers said there were contractor performance concerns and a subsequent poor performance evaluation. In response, the new contractor cited that system requirements were not complete and system documents were dated. Also, the contractor stated that there was missing information on data elements that were needed for them to do their work. EPA did not dispute this statement and replied:

The system delivered...was never tested. It is more than likely that some of the problems that emerged...were already present in the application, but since the application was neither tested nor used, problems lay dormant.

In response to our discussion draft report, OSRTI disagreed that the system was "never" tested. They stated that due to differences between EPA's staging and production environments, the testing in staging proved insufficient. As a result, problems quickly surfaced in the production application. OSRTI indicated it reviewed the processes used to move an application to production, which led to an overhaul of the processes. OSRTI indicated it was able to subsequently redeploy ICTS.

EPA's system life-cycle management processes are designed to make sure management is involved at key decision points, obtain and sustain the Agency's commitment, and coordinate systems-related activities. Project planning and tracking are vital to the success of the project. Project planning helps set up reasonable plans for building a system, while project tracking provides assurance that the project plan is being followed. The Agency's Automated Security Self Evaluation and Remediation Tracking system is used to create Plans of Actions and Milestones for identified system problems. Because OSRTI had not initially followed key system development practices in project planning and tracking, it had communication and contractor performance problems that led to OSRTI putting into production a version of ICTS that had significant quality problems. Although OSRTI appointed a certified project manager to further oversee ICTS and the SDMS project, it is incumbent upon management to document its processes for managing the SDMS project and conduct quality assurance reviews to make sure the processes are being followed as intended.

Recommendations

We recommend that the Director, Office of Superfund Remediation and Technology Innovation, Office of Solid Waste and Emergency Response:

1. Document procedures for overseeing the development activities for the SDMS project as prescribed by EPA System Life Cycle Management guidance. The procedures should contain steps to ensure that:
 - a. The new SMP for SDMS is kept current and management decisions are documented as they occur.
 - b. Testing of SDMS is completed as prescribed by EPA guidance.
2. Conduct and document a review of SDMS documentation to ensure the documents are current. If needed, direct the contractor to update system documents.
3. Create a Plan of Actions and Milestones in EPA's Automated Security Self Evaluation and Remediation Tracking system for the above recommendations.

Agency Comments and OIG Evaluation

On February 26, 2009, we met with OSRTI management to discuss the discussion draft version of our report. OSRTI said the discussion draft did not provide the current status of ICTS and should reflect that OSRTI integrated ICTS with SDMS. OSRTI also said the report did not provide the timeframe for when noted weaknesses existed and indicated it has taken steps to better manage SDMS. OSRTI asked OIG to reword the recommendations to make them apply to SDMS and note that SDMS has an SMP. Lastly, OSRTI contended that it should not be inferred that a problem in a complex system development project such as ICTS means automatic deficiencies in project management.

We changed the report where appropriate to address OSRTI concerns. We agree that problems that arise during system development do not automatically indicate project management problems. Software quality, reliability, and maintainability are enhanced by having good project documents for requirements, architecture, interfaces, test procedures, and management decisions. This is important during changes in contractors and project managers. We believe good documentation is the cornerstone of good project management. As such, we believe the lack of key project documents, combined with the turnover of project managers, directly contributed to perceptions that the ICTS project was not managed in accordance with prescribed system development practices. Also, project management is designed to reduce project risks. Had OSRTI kept key project documents, it would have had historical documents to better manage the risks that affected ICTS during contractor and project management turnover.

After our meeting with OSRTI, management replied in an e-mail dated March 4, 2009, that it will create an on-going review process to ensure that all major and non-major information technology systems have current and complete SMPs. OSRTI also put Plans of Actions and Milestones in EPA's Automated Security Self Evaluation and Remediation Tracking system to

track completion of our report's recommendations. We believe these corrective actions address our recommendations and will help ensure ICTS meets its desired program goals.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in \$000s)	
Rec. No.	Page No.	Subject	Status ¹	Action Official	Planned Completion Date	Claimed Amount	Agreed To Amount
1	4	Document procedures for overseeing the development activities for the SDMS project as prescribed by EPA System Life Cycle Management guidance. The procedures should contain steps to ensure that: <ul style="list-style-type: none"> a. The new System Management Plan for SDMS is kept current and management decisions are documented as they occur. b. Testing of SDMS is completed as prescribed by EPA guidance. 	O	Director, Office of Superfund Remediation and Technology Innovation	04/01/2009		
2	4	Conduct and document a review of SDMS documentation to ensure the documents are current. If needed, direct the contractor to update system documents.	O	Director, Office of Superfund Remediation and Technology Innovation	10/01/2009		
3	4	Create a Plan of Actions and Milestone in EPA's Automated Security Self Evaluation and Remediation Tracking system for the above two recommendations.	C	Director, Office of Superfund Remediation and Technology Innovation	03/04/2009		

¹ O = recommendation is open with agreed-to corrective actions pending
 C = recommendation is closed with all agreed-to actions completed
 U = recommendation is undecided with resolution efforts in progress

Appendix A

Distribution

Office of the Administrator
Acting Assistant Administrator for Solid Waste and Emergency Response
Director, Office of Superfund Remediation and Technology Innovation,
Office of Solid Waste and Emergency Response
Agency Follow-up Official (the OCFO)
Agency Follow-up Coordinator
Acting General Counsel
Acting Associate Administrator for Congressional and Intergovernmental Relations
Acting Associate Administrator for Public Affairs
Audit Follow-up Coordinator, Office of Solid Waste and Emergency Response
Acting Inspector General