



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

OFFICE OF  
THE INSPECTOR GENERAL

MEMORANDUM

SUBJECT: Supplemental Report of Audit of (Region 4's  
Superfund Indirect Cost Rate Under CERCLA  
for the Fiscal Year Ended September 30, 1983)  
Audit Report No. P5EH8-11-0034-80633

FROM: Kenneth D. Hockman *Kenneth D. Hockman*  
Divisional Inspector General for Audit  
Internal Audit Division (A-109)

TO: David P. Ryan  
Comptroller  
Office of the Comptroller (PM-225)

Attached are two copies of a supplemental report of audit of Region 4's Superfund Indirect Cost Rate for the Fiscal Year Ended September 30, 1983. We have no objection to the further release of this report at your discretion.

SCOPE AND OBJECTIVES

The firm of Tichenor and Eiche, Certified Public Accountants (CPA) previously performed an audit of the Superfund Indirect Cost Rates for the Fiscal Years ended September 30, 1984 and 1983. We transmitted the CPA's report to you on March 18, 1987 (Audit Report No. P5E16-11-0020-70901). Due to questioned and set-aside Personnel Compensation and Benefits costs (PC&B), the CPA did not express an opinion on Region 4's Superfund Indirect Cost Rate for fiscal 1983. Subsequently, Region 4 personnel reviewed PC&B costs for fiscal 1983 and adjusted the previously reported amounts. The CPA audited the adjusted PC&B costs for fiscal 1983 in accordance with generally accepted auditing standards and the Standards for Audit of Governmental Organizations, Programs, Activities, and Functions, issued by the U.S. General Accounting Office.

RESULTS OF AUDIT

The CPA accepted Region 4's Superfund Indirect cost rate of \$59 for each regional program hour charged to hazardous waste sites in fiscal 1983. Additional details are contained in the attached CPA's report.

**ACTION REQUIRED**

None. In accordance with EPA Directive 2750, you are the designated Action Official for this report. Since the report contains no recommendations, a formal written response is not required. We have closed out this audit in the Audit Tracking and Control System.

Should your staff have any questions, please have them contact Roland W. Cyr on 382-4930.

Attachment

cc: Tichenor and Eiche, CPAs

## DISTRIBUTION

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Chief, Superfund Accounting Branch (PM-226)	1
Agency Follow-up Official (PM-225)	1
Attn: Resource Systems Management Division	
Associate Enforcement Counsel for Hazardous Waste Enforcement (LE-134S)	1
C. <u>Region</u>	
Regional Administrator, Region 4	2
Audit Follow-up Coordinator	1



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

MAY 10 1989

MEMORANDUM

OFFICE OF  
THE INSPECTOR GENERAL

SUBJECT: Audit of Superfund Interagency Agreements  
with the Corps of Engineers - Jibboom Junkyard  
Site  
Audit Report M5BFL9-11-0037-9100276

FROM: Kenneth D. Hockman *Kenneth D Hockman*  
Divisional Inspector General for Audit  
Internal Audit Division (A-109)

TO: Harvey G. Pippen  
Director, Grants Administration Division (PM-216F)

On July 1, 1988, my office sent a copy of the attached Army Audit Agency report for information purposes to the Director, Office of Administration and the Director, Office of Emergency and Remedial Response. The report referred to apparent deficiencies in project design which may have resulted in construction costs increasing from \$2 million to \$4 million. At that time, I indicated that EPA's Office of Inspector General would review whether EPA contractor(s) contributed to the design deficiencies.

The Engineering and Science Unit (Unit) within the Office of Inspector General has completed its review. The Unit found no errors on the part of the architect/engineering (A/E) firm that developed the feasibility study for EPA. The following paragraph contains the Unit's conclusion:

There was no remedial investigation conducted for the site, and at the direction of EPA Region 9 the A/E utilized existing data for the site to prepare a final feasibility study. The A/E for the final feasibility study had no responsibility in determining the scope and characteristics of contaminants at the site. Therefore, the A/E cannot be held responsible for the construction cost increases due to the additional contamination and buried structures discovered during the remedial action at the site.

While the issue of contractor liability no longer concerns us, we believe EPA will need to take action if the Agency seeks to recover costs from a Potentially Responsible Party (PRP). Page 16 of the Army Audit Agency report states that a significant amount of site work was performed without modifying the construction contract. This included the excavation and transportation of approximately 5,700 tons of material, additional air monitoring and perimeter sampling, and extended security and contractor supervision. The Corps' contract close-out process has been completed.

On May 2, 1989, Emil Knutti of the Office of Waste Programs Enforcement indicated that EPA had not identified a PRP. Mr. Knutti added, however, that if a PRP is identified, EPA's recovery case would be strengthened if the Corps and its construction contractor ratified the contract to reflect variations in estimated quantities. In responding to the audit report, the Corps indicated that it would ratify the contract if requested by EPA (see attachment B). Accordingly, we are making the following recommendation.

#### RECOMMENDATION

If EPA plans to recover costs from a Potentially Responsible Party for work at the Jibboom Junkyard site, we recommend that the Director, Grants Administration Division request the Corps of Engineers to ratify the Corps construction contract to cover all variations in estimated quantities.

#### ACTION REQUIRED

In accordance with EPA Directive 2750, the action official is required to provide this office with a copy of the proposed determination on the findings within 90 days of the audit report date. For corrective actions planned but not completed, reference to specific milestone dates will assist this office in closing this report.

Should **your** staff have any questions concerning this report, please **have** them call John Walsh on 475-6753.

Attachment

APPENDIX

DISTRIBUTION OF REPORT

Director, Office of Emergency and Remedial Response (OS-200)

Director, Office of Program Management (OS-240)

Associate General Counsel, Solid Waste and Emergency  
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Regional Administrator, Region 9

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Agency Followup Official (PM-208)

Audit Followup Coordinator (PM-208)  
Attn: Program Operations Support Staff

Agency Followup Official (PM-225)  
Attn: Director, Resource Management Division

ES-02-15-00-29

U. S. ARMY AUDIT AGENCY

DA FORM 60-60

15 APR 1964

REPORT OF AUDIT

OFFICE OF THE AUDITOR GENERAL

WASHINGTON, D. C.

15 APR 1964



The following information was furnished outside the agency for the purpose of providing information that would be helpful in the conduct of the audit. It is not to be used for any other purpose without the express written consent of the agency. The results of the audit are set forth in the report of the Auditor General, U. S. Army Audit Agency, and requested this report.



DEPARTMENT OF THE ARMY  
OFFICE OF THE AUDITOR GENERAL  
3101 PARK CENTER DRIVE  
ALEXANDRIA, VIRGINIA 22302-1596

15 April 1988

Commander, U. S. Army Engineer District, Omaha  
Commander, U. S. Army Engineer District, Sacramento

This is our report on the Audit of Superfund Construction for the Jibboom Junkyard site at Sacramento, California. The audit was made from June 1987 through January 1988 at your commands and was part of a multilocation Audit of Superfund Construction.

Procurement practices used for the design and construction projects at the Jibboom Junkyard site were in accordance with prescribed procedures for contracts and contract modifications; however, contract modifications were not issued for variations in estimated quantities listed in the construction contract. Surveillance of the design and construction contractors was adequate; but, apparent design omissions identified during construction were not properly assessed for potential architect-engineer liability as required by regulatory guidance. Except for obligations, accounting transactions were generally recorded promptly and accurately. The U. S. Army Corps of Engineers' direct and indirect costs for the Superfund project were consistent with established procedures for the design project but not for some costs of the construction project. Actions to implement the Army's Internal Control Program as it relates to Superfund construction were adequate. The results of audit are summarized in Part I and the details are in Part II of this report. Copies of the report are being furnished to the activities listed in the Annex.

*Harold L. Stugart*  
HAROLD L. STUGART  
The Auditor General



**AUDIT OF SUPERFUND CONSTRUCTION  
JIBBOOM JUNKYARD SITE  
SACRAMENTO, CALIFORNIA**

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**U. S. ARMY AUDIT AGENCY  
ALEXANDRIA, VIRGINIA 22302-1596**

**AUDIT OF SUPERFUND CONSTRUCTION  
JIBBOOM JUNKYARD SITE  
SACRAMENTO, CALIFORNIA**

**MW 88-601**

**15 APRIL 1988**

**PART I**

**SUMMARY**

**PREFACE**

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Public Law 96-510) mandated the establishment of the Hazardous Substance Response Trust Fund, which is commonly known as "Superfund." The Superfund, managed by the U. S. Environmental Protection Agency, was established to respond to emergency hazardous conditions and to fund the cleanup efforts required to remove or control hazardous waste substances in instances when the responsible party cannot be identified or will not perform the cleanup and the State will not assume responsibility. In February 1982, the Environmental Protection Agency and the U. S. Army Corps of Engineers reached an agreement for the Corps to provide technical assistance, contract for design and construction work, and perform contract administration functions when the Federal Government assumes cleanup responsibility for hazardous waste sites. The actual cleanup is accomplished by contracting with private firms. Contract costs are paid by the Corps and then reimbursed by the Environmental Protection Agency.

The public law establishing the Superfund requires the Inspector General, Environmental Protection Agency to audit Superfund as appropriate and requires Federal agencies to cooperate with the Inspector General's efforts. The Inspector General requested audit assistance from The Auditor General of the Army in evaluating the Corps' management of Superfund cleanup efforts. Representatives of the The Auditor General and the Inspector General decided that an audit during 1987 of the Corps' involvement with Superfund would evaluate the effectiveness of accounting, procurement, and contract administration for selected Superfund projects and would evaluate the appropriateness of Corps' in-house costs charged to the projects. This report gives our audit results for the design and construction projects for the Jibboom Junkyard Superfund site.

## **OBJECTIVES AND SCOPE**

By agreement with the Environmental Protection Agency, the mission of the Corps includes providing technical assistance for the cleanup of the Jibboom Junkyard hazardous waste site, contracting for design and construction work at the hazardous waste site, and performing the associated contract administration functions. Specific audit objectives for our review of the Jibboom Junkyard cleanup effort were to determine whether:

- Contracts and contract modifications were awarded in accordance with prescribed procedures and if procurement practices ensured that services were received at fair and reasonable prices.
- Surveillance of contractor performance was adequate to ensure contract requirements were met and whether payments made to contractors were proper.
- Accounting transactions (obligations, disbursements, receivables, and collections) were promptly and accurately recorded in the accounting records, and if any rejected transactions were corrected and reentered in a timely manner.
- Direct and indirect cost charges were consistent with established Corps of Engineers procedures.
- Actions taken to implement the Army's Internal Control Program, as it relates to Superfund construction, were adequate.

The audit, performed from June 1987 through January 1988, was made in accordance with generally accepted government auditing standards and, accordingly, included such tests of internal controls as we considered necessary in the circumstances. The audit was an integral part of the multilocation Audit of Superfund Construction, and the results will be included in an overall report to higher management levels. Additionally, the results of audit will be provided to the Inspector General, Environmental Protection Agency. Audit work was performed at Headquarters, U. S. Army Engineer District, Omaha; Headquarters, U. S. Army Engineer District, Sacramento and its Valley Resident Field Office. The audit covered transactions that were representative of operations current at the time of the audit.

## **BACKGROUND**

The Associated Metals Company operated a metal salvaging business from 1951 to 1965 on a 9-acre site in downtown Sacramento, California. In 1965, the State of California purchased the Associated Metals Company property for easement and construction of an interstate highway. Construction of the highway and an adjacent frontage road during 1967 covered all but about 2.7 acres of the Associated Metals Company property. Based on information that the site had been used for dismantling transformers, soil samples were taken from the site during April 1981. The soil samples showed extensive contamination from lead, zinc, copper, and polychlorinated biphenyls (commonly known as PCBs). The site, named Jibboom Junkyard after an unofficial nearby landfill, was identified for Federal cleanup by the Environmental Protection Agency because it was near an intake pipeline for the city's municipal water supply. The cleanup process involved the excavation and offsite disposal of contaminated material in an approved landfill facility.

To accomplish the cleanup, the Environmental Protection Agency made available to the Corps about \$5.2 million. The Omaha District awarded the design contract for the cleanup effort in May 1985 using an existing indefinite-delivery order type contract and awarded the construction contract for the cleanup effort in July 1986. The design contract was administered by the Omaha District and the construction contract was administered by the Sacramento District. The construction contract responsibility was transferred to the Sacramento District following contract award because the cleanup site was located within the Sacramento District's geographic boundary. Cleanup of the Jibboom Junkyard site was 99-percent physically completed by May 1987.

## **OBSERVATIONS AND CONCLUSIONS**

The contract for the Jibboom Junkyard site cleanup design was awarded in accordance with prescribed procedures, and procurement practices ensured that services were received at fair and reasonable prices. Delivery order 7 to an existing indefinite-delivery contract was issued during May 1985 in the amount of \$46,209 for preparation of final design documents for the Jibboom Junkyard cleanup. There were no modifications issued for the design effort. Services for the indefinite-delivery contract used for the design effort were advertised in the Commerce Business Daily and 20 architect-engineer firms responded. Preselection and selection boards evaluated each

of the firm's qualifications and ranked three firms considered for contract award. Prior to negotiation, cost data was obtained from the prospective firm selected and a government cost estimate was used in evaluating the reasonableness of the bid proposal.

Contract and contract modifications issued for the construction project at the Jibboom Junkyard site were awarded in accordance with prescribed procedures, and procurement practices ensured that services were received at fair and reasonable prices. However, contract modifications were not issued for variations in estimated quantities listed in the construction contract. Services for the construction contract were advertised in the Commerce Business Daily and six prospective contractors responded. A government cost estimate was used to evaluate bid proposals received and the lowest bid proposal submitted by a responsive contractor was selected for contract award. A firm-fixed price contract for about \$2 million was awarded during July 1986 for the construction project. There were 20 modifications valued at \$389,424 awarded as of 31 July 1987 and one modification was pending. Modifications were negotiated in accordance with the Engineer Federal Acquisition Regulation Supplement using government cost estimates and cost or pricing data obtained from the contractor. However, the construction contract was not modified to increase the total contract price by about \$1.6 million for variations in estimated quantities paid. As a result, payments to the contractor exceeded the value of the contract and contract documentation did not show the actual amount of services covered by the contract. Use of contract modifications for all variations in estimated quantities would help to ensure proper documentation for recording obligations as well as to ensure that payments to contractors are within the total contract price.

Surveillance of the design contractor's performance was adequate to ensure that contract requirements were met and payments made to the contractor were proper. Timely reviews were made of design documents submitted by the contractor. Corps personnel verified that services were performed before giving approval for payment to five requests for progress payments received from the contractor. The architect-engineer contractor for the Corps prepared the final design that included the statement of work for the Superfund construction project. An architect-engineer firm under contract to the Environmental Protection Agency had prepared the final feasibility study and other related documents that established the scope of work for the Jibboom Junkyard hazardous waste cleanup. The feasibility study provided a list of hazardous materials at the site plus an estimate of the amount of material for

excavation and disposal. The Corps design effort was based on the Environmental Protection Agency feasibility study and other related documents.

Surveillance of the construction contractor's performance was adequate to ensure that contract requirements were met and payments made to the contractor were proper. But, information on apparent design omissions identified during construction was not properly assessed for possible architect-engineer liability as required by regulatory guidance. Contract requirements were met for monitoring pay quantity measurements and quality control, issuing progress payments, maintaining entrance control, and approving transporters. Corps personnel verified that construction services were properly performed before giving approval for payment to 12 requests for progress payments received from the contractor. The construction contract, initially awarded for about \$2 million, grew to about \$4 million to cover work not identified by the design effort. Also, a work stoppage of 2 weeks occurred due to a shortage of funds. The design effort underestimated the amount of material for excavation and disposal by about 100 percent and did not identify three types of hazardous materials plus underground concrete structures that were present at the site. The construction design prepared by the Corps was based on information furnished by the Environmental Protection Agency. Additional coordination was needed to ensure that information on the apparent design omissions would be furnished to the Corps design activity and the Environmental Protection Agency so that architect-engineer liability could be assessed for possible cost recovery and lessons learned could be evaluated for possible changes in methods on future projects.

Except for obligations, accounting transactions for the design and construction projects were generally recorded promptly and accurately in the accounting records. Rejected transactions were corrected and reentered in a timely manner.

- About \$72,400 of obligations were recorded for the design project from May 1985 through November 1986, and about \$4.2 million of obligations were recorded for the construction project from March 1986 through May 1987. Obligations were recorded late for over 70 percent of the cost of the construction contract, obligations were understated by about \$121,000 for variations in estimated quantities, and an obligation of \$60,000 was recorded twice for a contract modification. Sacramento District needed to issue guidance reemphasizing the need to follow existing local procedures for recording obligations timely and accurately.

- An obligation of about \$46,200 for the design contract was not recorded promptly after the issuance of the delivery order. However, prior to our review the Omaha District changed their procedures for obligating delivery orders to indefinite-delivery contracts so that future obligations will be recorded promptly with the issuance of a delivery order for a design project.
- About \$52,000 of disbursements were recorded for the design project from May 1985 through November 1986, and about \$3.5 million of disbursements were recorded for the construction project from May 1986 through May 1987. In total, 41 transactions were recorded. Disbursements were made for design and construction contractor invoices, purchase orders, travel vouchers, and reimbursable order invoices. All but 3 of the 19 disbursement transactions reviewed were promptly and accurately recorded within 30 days of the approval for payment. The three transactions not promptly and accurately recorded were small dollar amounts not having material impact.
- About \$72,400 of receivables were recorded for the design project from May 1985 through December 1986, and about \$3.9 million of receivables were recorded for the construction project from April 1986 through May 1987. In total, 29 transactions were recorded. The receivables were based on monthly bills sent to the Environmental Protection Agency. Of 12 transactions reviewed, 11 were promptly and accurately recorded within the same month that the bills were sent to the Environmental Protection Agency for reimbursement. Problems with an update of computer software caused a 2-month delay in recording the other transaction reviewed.
- About \$72,400 of collections were recorded from May 1985 through January 1987 for the design project, and about \$1.6 million of collections were recorded for the construction project from March 1986 through May 1987. All nine collection transactions reviewed were promptly and accurately recorded within 3 workdays after receipt of the check.
- A total of 15 rejected transactions occurred from May 1985 through November 1986 for the design project, and 8 rejected transactions occurred from February 1987 through June 1987 for the construction project. All 10 rejects reviewed were corrected promptly and reentered to the accounting records within the same month that the rejects occurred.

Direct and indirect Corps costs charged to the Jibboom Junkyard cleanup were consistent with established Corps procedures for the design project but were inconsistent for some costs of the construction project. About \$26,200 of Corps costs were incurred for the design project through November 1986 and about \$153,600 of Corps costs were incurred for the construction project through May 1987. According to Engineer Regulation 37-2-10, in-house expense such as labor, travel, supplies, and reimbursable orders that can be directly related to a specific Corps project should be charged to the specific project. Overhead and indirect costs are then charged to the project based on a predetermined rate applied to actual direct labor hours incurred. Fifteen Corps personnel charged direct labor hours to the design project and 21 Corps personnel charged direct labor hours to the construction project. The five personnel reviewed for the design project performed tasks that benefited the Jibboom Junkyard design project. About \$23,700 for Corps expenses of labor and district overhead was improperly charged to the construction project for 13 personnel who had not performed services in support of the project. Cost transfers were made from flood control projects to the Superfund construction project for which accumulated costs were under the budgeted amount. Action was needed to transfer the improper labor and district overhead costs to the appropriate flood control projects. Travel and reimbursable work charged to the design and construction projects were expenses that directly benefited the projects. The only overhead and indirect costs charged to the projects were amounts based on direct labor hours. Overhead and indirect costs charged to the Jibboom Junkyard Superfund site projects were based on the same allocation method that was used for all reimbursable work performed by the Corps.

Actions taken to implement the Army's Internal Control Program, as it relates to Superfund construction, were adequate. Superfund functions were not designated as a separate assessable unit, but rather the various aspects of Superfund functions were included in several assessable units. No DA or Corps published internal control checklists specifically for Superfund functions were available at the time of our review. Both Omaha District and Sacramento District required key managers with Superfund responsibilities to have internal control responsibilities in their job descriptions and performance standards. Omaha District completed 10 internal control checklists during the 19 month period ending June 1987 and 10 were in progress at the time of our audit. Sacramento District



## **PART II**

### **FINDINGS, RECOMMENDATIONS, AND COMMAND COMMENTS**

**FOR THE COMMANDER,  
U. S. ARMY ENGINEER DISTRICT, SACRAMENTO**

#### **A - PROJECT DESIGN**

##### **FINDING**

Design of the cleanup effort for the Jibboom Junkyard Superfund site underestimated the amount of material requiring excavation and disposal by about 100 percent, did not identify three additional types of hazardous materials present, and did not consider the presence of underground concrete structures at the site. As a result, the cost of the construction contract, initially awarded for about \$2 million, increased to about \$4 million to cover the work not identified during project design. Additionally, a work stoppage of 2 weeks resulted due to a shortage of funds for the construction contract cost increase. The U. S. Army Engineer District, Omaha contracted with an architect-engineer firm to develop construction plans and specifications based on information obtained from documents furnished by the U. S. Environmental Protection Agency. A different architect-engineer firm under contract with the Environmental Protection Agency prepared some of the documents furnished to the Omaha District. Procedures used to investigate apparent design omissions and problems identified during the cleanup were not in accordance with regulatory guidance, and local implementing procedures did not cover instances where design was accomplished by an activity other than the construction district. Therefore, architect-engineer liability was not properly assessed for possible cost recovery and lessons learned were not evaluated by the design activity for possible changes in methods on future projects. Also, unit costs of the construction contract may have been lower due to efficiencies in larger quantities and increased competition had the scope of work been reasonably determined during design.

##### **DISCUSSION**

1. **Background.** Architect-engineer contractors are responsible for the professional quality, technical accuracy, and coordination of all services required under their contracts. An architect-engineer firm may be liable for government costs resulting from errors and deficiencies in designs furnished under its contracts. When a modification to a construction contract is required because of an error

or deficiency in the services provided under an architect-engineer contract, the Federal Acquisition Regulation requires that the potential for liability of the architect-engineer be evaluated. Procedures and responsibilities within the U. S. Army Corps of Engineers for investigating and pursuing possible architect-engineer liability are included in Engineer Regulation 715-1-10. The U. S. Army Engineer District, Sacramento has a local written procedure that covers assessing possible architect-engineer liability. Lessons learned concerning design problems should also be furnished to the design activity so that changes in methods can be considered for future design projects.

2. **Construction.** The scope of work needed to clean up the Jibboom Junkyard Superfund site was significantly understated by the design.

a. **Contract Award.** The initial construction contract was awarded for about \$2 million. About \$1.6 million of the award price was for the excavation, disposal, and related work for an estimated 6,000 tons of contaminated material. Chemicals present at the site according to the description in the construction contract which was based on the design were lead, zinc, and copper in concentration levels above acceptable State and Federal limits, and polychlorinated biphenyls (commonly known as PCBs) in concentration levels that did not exceed State and Federal limits. The estimate of the amount of contaminated material and the specific chemicals present at the site was obtained from the documents provided to the Corps by the Environmental Protection Agency.

b. **Site Cleanup.** During the actual cleanup, 11,910 tons of contaminated material (twice the estimate) were excavated and removed from the site. Asbestos, cadmium, and polynuclear aromatics pesticides were encountered during cleanup. These hazardous materials were not shown on the construction contract statement of work as present at the site. The construction contractor was highly concerned about the unexpected discovery of asbestos at the site because of the potential adverse impact on the health and safety of his workers. Buried concrete structures were also encountered at the site that were not shown on the contract plans and specifications. The presence of concrete made excavation at the site more difficult and costly. The value of the construction contract grew by about \$2 million, to a total of about \$4 million, to cover the additional work.

**3. Administration and Noncompetitive Acquisition.** Increased administrative effort and a form of noncompetitive acquisition occurred because the scope of work was not reasonably estimated for the construction contract.

a. **Funds.** Additional fund authority had to be requested and received from the Environmental Protection Agency before additional contractor work was allowed to occur. The initial interagency agreement between the Corps and the Environmental Protection Agency for the cleanup had to be modified six times to provide increased fund authority for the site. The contractor was directed to stop work for a 2-week period during March 1987 due to insufficient funds. The contractor requested reimbursement for overhead costs of about \$35,000 during the work stoppage period. At the time of our review, a contract modification for this expense was being processed but had not been finalized. The expense for the contractor's overhead costs during the work stoppage would probably not have occurred had the scope of work been reasonably determined since fund availability would have been obtained before construction start.

b. **Contract Modifications.** Through July 1987, 20 contract modifications were processed and issued valued at about \$390,000 and expenses of about \$1.6 million were also incurred for variations in estimated quantities not shown on contract modifications. Administrative effort was required to process each modification and to request funds to cover the modifications and variations in estimated quantities. This administrative effort would probably not have been required had the scope of work been reasonably determined during design.

c. **Type of Acquisition.** The additional work not covered in the design was acquired on a noncompetitive basis from the construction contractor. Unit costs for the construction contract (awarded on a competitive basis) may have been lower had the scope of work been reasonably determined during design because of increased potential contractor interest due to a larger contract value and efficiencies inherent in larger quantities.

**4. Reviews.** The potential for architect-engineer liability was not properly assessed and documented for the apparent design omissions. Of the 20 contract modifications issued, 4 valued at about \$250,000 specifically cited insufficient field investigation as the reason for the changes. Other contract modifications also could have been caused by design omissions. The construction contractor, in a letter to the contracting officer's representative on

the unexpected discovery of additional chemical hazards at the site, stated that it would seem unlikely that the presence of asbestos was not detected during design.

a. **Design.** Design for the cleanup of the Jib Junkyard Superfund site was based on architect-engineer services provided by two firms. The Environmental Protection Agency contracted with an architect-engineer firm to develop the final feasibility study and other related documents that included a list of hazardous materials at site plus an estimate of the amount of material for excavation and disposal. The results of this effort were provided to the Corps of Engineers and the Omaha District. The Corps contracted with a different architect-engineer firm to develop the final design that included plans and specifications and a statement of work for the construction project. The Corps' final design was based on information in the feasibility study and other documents to include the initial and final Pre-Design Studies (both prepared by the architect-engineer firm) and the Record of Decision and amendment to the Record of Decision obtained from the Environmental Protection Agency. In accordance with the interagency agreement, the Corps' architect-engineer contractor did not perform site surveys or other investigations and this was not required by the contract.

b. **Evaluations.** The potential for architect-engineer liability was not assessed by Omaha District. The Corps' design activity, for the apparent design omission. According to Engineer Regulation 715-1-10, when construction is accomplished by a district different than the design activity, the design activity has responsibility for investigating and, if warranted, pursuing architect-engineer liability. The construction district has responsibility for providing all necessary information and cooperating fully with the design activity. Sacramento District has local written guidance that covers assessment of possible liability but the guidance does not provide procedures for when the design activity is outside Sacramento District. Information on apparent design omissions and problems was provided orally to Omaha District and the Environmental Protection Agency by the Sacramento District. But, Omaha District personnel did not conduct assessments for possible architect-engineer liability. Lessons learned based on the oral information provided in addition to being able to assess for possible liability specific information on design omissions might be gained from design activities with lessons learned concerning practices that could be avoided on future designs if change methods were made.

c. **Documentation.** Conclusions reached on the potential for architect-engineer liability were not documented and included in the contract files. Engineer Regulation 715-1-10 requires that a written determination be made for all apparent design omissions covering the extent of liability and the appropriateness of pursuing recovery action. The written determinations are to be included in the contract file. Sacramento District personnel told us that design omissions and problems for the Jibboom Junkyard Site were not the fault of the Corps' architect-engineer; but, this conclusion and the rationale for this conclusion were not documented. Personnel at Omaha District did not make any liability reviews, so results were not documented and included in either the architect-engineer or construction contract files. Also, a Corps conclusion was not provided to the Environmental Protection Agency.

#### **RECOMMENDATIONS AND COMMAND COMMENTS**

A-1 Provide Omaha District with complete information on apparent design omissions and construction changes for the Jibboom Junkyard Superfund site. Request Omaha District to provide the information to the Environmental Protection Agency, if appropriate, after reviews are made for possible architect-engineer liability and lessons learned.

Command agreed and stated that information on apparent design omissions and construction changes for the Jibboom Junkyard Superfund site will be provided to the Omaha District by third quarter FY 88. Command also stated that the Environmental Protection Agency had an on-site Project Manager who was fully aware of all contract modifications and the basis for the modifications. The Army auditors should consider contacting the Environmental Protection Agency's auditors to ensure that the Environmental Protection Agency is properly assessing possible architect-engineer liability. It seems that Environmental Protection Agency's procedures and actions are of primary concern here and not the Corps'.

**U. S. Army Audit Agency Evaluation.** This audit was requested by the Inspector General, Environmental Protection Agency and the results of audit will be furnished to the Environmental Protection Agency's auditors. The purpose of this audit was to determine if the Corps carried out its responsibilities.

A-2 Revise the local written guidance covering reviews for architect-engineer liability to include procedures for when the design activity is outside the District.

Command agreed and stated that Sacramento District Office Memorandum 715-1-3 will be revised by 30 June 1988 to include procedures for architect-engineer liability reviews in instances when the responsible design activity is located outside the District. Copies of Sacramento District Form 84, Request for Approval of Contract Modification, for the Jibboom Junkyard Superfund site will be sent to the Omaha District Project Manager for review and completion of the architect-engineer liability part on the back side of the form. This procedure is currently being used on the Celtor Chemical Works (Hoopa) Superfund site.

The Commander, U. S. Army Engineer District, Omaha also provided comments on the finding and recommendations and stated that:

- Omaha District personnel performed the design assignment in accordance with the Environmental Protection Agency guidance and intent. During the design period, there were no discussions dealing with a Corps' responsibility to secure additional field data. The Environmental Protection Agency representative maintained that the site had been investigated 6 times and that about 99 soil samples had been obtained and analyzed. The amount of contaminated material ultimately removed merely proves that the unknown hazards on the site may not have been properly identified, even if additional field work had been authorized. Contamination within the site varied immensely.
- Omaha District personnel believe that the Environmental Protection Agency decided to accept the site information available rather than spend thousands of dollars performing additional field work. Unfortunately, this decision led to the construction cost exceeding the original low bid by more than 100 percent. This is unfortunate but understandable based on the data available at the time the decision was made.
- The Omaha District will conduct a review for possible architect-engineer liability after receipt of information on apparent design omissions and construction changes from the Sacramento District.

**FOR THE COMMANDER,  
U. S. ARMY ENGINEER DISTRICT, SACRAMENTO**

**B - CONTRACT MODIFICATIONS AND OBLIGATIONS**

**FINDING**

The construction contract for the Jibboom Junkyard Superfund site was not modified to increase the total contract price by about \$1.6 million for variations in estimated quantities paid. As a result, payments to the contractor exceeded the total value of the contract and contract documentation did not show the actual amount of services covered by the contract. In addition, obligations were not recorded in accordance with regulatory guidance for the construction contract. Obligations of \$185,445 were recorded improperly, obligations of \$246,614 were not recorded, and obligations of about \$3 million were not recorded in a timely manner because of lack of coordination within the Sacramento District between personnel of the Construction-Operations Division and personnel of the finance and accounting office. Therefore, the balances of funds available for future obligations and monthly reports of funds obligated were inaccurate due to the way obligations were recorded for the contract.

**DISCUSSION**

**1. Background**

a. **Contract.** The Jibboom Junkyard Superfund site construction contract included three line items of work that were identified as subdivided items and estimated quantities were shown for the lines. The first subdivision of each line reflected the minimum amount of work expected and the second subdivision reflected an additional estimated quantity. A variations in estimated quantities-subdivided items clause was included in the contract. This clause, discussed in the Engineer Federal Acquisition Regulation Supplement, is used when costs to perform units of work are expected to go down as the quantities go up. Bid items are subdivided so the contractor can distribute indirect costs in the bid price to the first subdivision. The clause does not allow the government to request an equitable adjustment to the unit price when actual quantities are significantly greater than the total subdivided items. Contract modifications are issued to cover changes in requirements after contract award. Basic policy and procedures for processing contract modifications are included in the Federal Acquisition Regulation and the Engineer Federal Acquisition Regulation Supplement.

b. **Recording Obligations.** Each government agency is directed by law to establish and maintain an adequate system of accounting and internal controls over obligations, accrued expenditures, applied costs and outlays. The Corps uses the finance and accounting subsystem of the Corps of Engineers Management Information System to record accounting transactions for site-specific funds provided by the Environmental Protection Agency for Superfund work. Guidance for recording obligations is provided in AR 37-21 and Engineer Regulation 37-2-10. With minor exceptions, obligations incurred should be charged immediately against the applicable fund.

## **2. Contract Modification**

a. **Variations in Quantity.** Variations in estimated quantities occurred for the Jibboom Junkyard Superfund construction contract, but the contract value was not modified to cover about \$1.6 million for variations that were paid. Variations in quantities occurred for excavation and transportation of 5,910 tons of contaminated material, additional air monitoring and perimeter sampling, and extended security and contractor supervision. Only 220 of the 5,910 ton variation was covered by a contract modification. Personnel of the Sacramento District's Construction-Operations Division stated that contract modifications were not needed because the contract, as written, allowed for variations and the only change was in the amount of work performed. We believe that the use of contract modifications for all variations in estimated quantities would ensure proper documentation for recording obligations as well as help to ensure payments to contractors are within the total contract price.

b. **Obligations.** Obligations totaling \$372,059 for variations in estimated quantities were not properly recorded on the accounting records. The District used a local form covering variations in estimated quantities for fund control purposes. The form was initiated by Construction-Operations Division personnel and later forwarded to the finance and accounting office for recording obligations. The form, however, was not signed by the contracting officer. There were four local forms prepared for the variations in estimated quantities for the Jibboom Junkyard Superfund site and a cumulative dollar amount was shown on the forms. The forms showed the following:



<u>Form Number</u>	<u>Date</u>	<u>Cumulative Amount</u>
10	8 December 1986	\$ 125,445
10R	3 February 1987	597,815
10R3	5 March 1987	1,443,407
10R4	22 April 1987	1,690,021

Obligations totaling \$1,568,852 were recorded for the variations in estimated quantities. Correct amounts were recorded for form numbers 10 and 10R3, but \$125,445 too much was recorded for form 10R because the total rather than the difference between forms 10 and 10R3 was recorded. No amount was recorded for form 10R4 when \$246,614 should have been recorded. We could not determine why an obligation was not recorded for form 10R4 but the omission was not identified by Construction-Operations Division personnel and the finance and accounting office due to a lack of coordination or reconciliation.

c. **Payments.** Total payments made to the contractor exceeded the total contract price as shown on contract documentation. According to the payments clause of the contract, the government will pay the contractor the price as provided in the contract. About \$3.9 million had been paid to the contractor as of the 12th progress payment, made during June 1987, but the price shown on contract documentation was only about \$2.4 million. The difference was funds for variations not included in contract modifications (about \$1.6 million), less unliquidated obligations for amounts shown on the contract (about \$100,000), and retained amounts (\$6,500). Unless estimated quantities are adjusted to actual amounts, contract documentation will be incomplete because the actual contract price will not be shown. The use of modifications would provide a maximum total contract value.

3. **Contract Obligations.** Untimely obligations were recorded for over 70 percent of the construction contract dollars and an obligation was recorded twice for a contract modification. We considered an obligation untimely when it was not recorded in the same month that the liability occurred. Recorded obligations for the construction project totaled about \$4.2 million as of 31 May 1987. Obligations of about \$3 million had not been recorded in a timely manner. The largest untimely obligation was about \$2 million for the initial construction contract awarded during July 1986 but not recorded in the financial records until November 1986. The untimely obligations resulted from lack of coordination between personnel of the Construction-Operations Division and the finance and accounting office.

Also, an obligation of \$60,000 was recorded twice for contract modification number 14. The first obligation was recorded during January 1987 when a request was being processed for approval of the modification and the second obligation was recorded during April 1987 after the modification was issued. The duplicate obligation had not been detected and corrected as of 30 June 1987. Balances of funds available for future obligations were overstated and reports of monthly funds obligated were understated due to the way obligations were recorded for the contract. Proper accounting for obligations is necessary at all times for fund control to prevent actual expenditures from exceeding authorized expenditures and to ensure accurate monthend financial reports.

#### **RECOMMENDATIONS AND COMMAND COMMENTS**

B-1 Issue a contract modification to cover all variations in estimated quantities on the Jibboom Junkyard Superfund site construction contract.

B-2 Direct that contract modifications be issued for all variation amounts in estimated quantities on future Superfund site construction contracts having a variations in estimated quantities clause.

Command did not agree with Recommendations B-1 and B-2 and stated that no Federal Acquisition Regulation or other regulatory authority has been cited showing a need or requirement for such a modification action. The recommended action for modification is, therefore, based on the auditor's opinion as to the need for additional documentation. However, the variation in quantity is already authorized by the Special Clause 11, Variations in Estimated Quantities, to the contract. Unit prices and variations in quantity are allowed by the Federal Acquisition Regulation 12.402, 12.403, and 36.207. Not only is authority already provided in the contract, but the Contracting Officer, Authorized Representatives of the Contracting Officer, and the Resident Contracting Officers signed the progress payments and final payments as required. A modification would be redundant, increase administrative costs, make project management more difficult, and could increase the contract cost because a modification may allow the contractor to renegotiate higher unit prices. The variations in estimated quantities clause has been consistently administered by this District for years and is adhered to by other Corps Districts. The recommendation would be acceptable only after a clear demonstration that a valid need or requirement exists for

the modification and that the requirement outweighs any negative impact. The auditors should address this finding to Headquarters, Corps of Engineers since other Corps Districts may be affected.

**U. S. Army Audit Agency Evaluation.** The total dollar value of the contract increases or decreases when variations occur in the estimated quantities. This changes the terms of the contract (total value) and a modification to the contract is required. Part 43 of the Federal Acquisition Regulation states that modifications are used to reflect other agreements of the parties modifying the terms of contracts. If modifications are not issued for variations, the contract has no maximum authorized total value. Issuing contract modifications for variations provides a control over the total dollars authorized since a maximum amount is specified and this ensures that funds are available before the government creates a liability. Modifications should be periodically issued to increase the authorized ceiling as new estimates of the quantities above the ceiling are determined. The need for modifications for variations in estimated quantities was discussed with the Principal Assistant Responsible for Contracting, Headquarters, Corps of Engineers. The Principal Assistant agreed with our conclusion that formal modifications are appropriate for variations in estimated quantities.

**B-3** Make a review of the accuracy of obligations recorded for the Jibboom Junkyard Superfund site construction contract. Adjust the obligations recorded based on the review.

Command agreed and stated on 9 December 1987 that the obligations had been reviewed. The program management and finance and accounting records were reconciled and necessary adjustments were made.

**B-4** Issue guidance reemphasizing the need to follow local existing procedures for recording obligations promptly and accurately.

Command agreed and stated that Operating Manual 37-1-1, Administrative Control of Funds, was issued on 5 October 1987. The manual reemphasizes timely and properly recording of obligations and clarifies the responsibilities of the finance and accounting staff and the program directors.

**FOR THE COMMANDER,  
U. S. ARMY ENGINEER DISTRICT, SACRAMENTO**

**C - IN-HOUSE COSTS**

**FINDING**

About \$23,700 was improperly charged to the Jibboom Junkyard Superfund construction project for Corps of Engineer expenses of labor and district overhead. Improper cost transfers were made from flood control projects to the Superfund project. District procedures and controls were not adequate to preclude the cost transfers. As a result, funds obtained from the Superfund Trust Fund were used improperly for support of the District's flood control mission.

**DISCUSSION**

1. **Background.** Engineer Regulation 37-2-10 provides guidance concerning the accounting treatment of the Corps' in-house costs incurred in support of its various projects. The general rule is that costs which directly attribute to a specific project should be charged to that specific project. The Corps budgets for and receives funds from the flood control and coastal emergencies appropriation for its flood control projects. Interagency agreements between the Environmental Protection Agency and the Corps are established to provide funding for Superfund projects managed by the Corps.

2. **Costs.** About \$23,700 was improperly charged to the Jibboom Junkyard Superfund construction project for Corps expenses of labor and district overhead. About \$153,000 was charged to the Jibboom Junkyard project for in-house expenses through 31 May 1987. Improper charges were about 15 percent of the total.

a. **Labor.** Labor was charged to the Superfund construction project for 13 District personnel who had not performed services in support of the project.

(1) **Cost Transfers.** During February 1987, two cost transfers were processed moving 1,029 labor hours from District flood control projects to the Jibboom Junkyard Superfund construction project. The labor hours were for 13 personnel assigned to a field office of the Sacramento District and represented about \$16,800 of labor expense for the period 25 January through 7 February 1987. The reason for the transfers on the documentation was erroneous labor charging; but a detailed explanation was not given.

Through discussion with personnel at the field office and review of time reporting records, we determined that six personnel had never performed any services for the Jibboom Junkyard construction project and the remaining seven had not performed services for the project during the period 25 January through 7 February 1987. The cost transfers were initiated by personnel of the District's Construction-Operations Division and the initiator signed for the Division Chief on the transfer authorizations. We discussed the cost transfers with the initiator and found that there was no information available showing that the labor charges were erroneous. District procedures and controls were not adequate to prevent the improper cost transfers to the Superfund project.

(2) **Reason for Transfer.** Command personnel gave the following explanation for the transfers made. The project was the first of its kind in the Sacramento District and it was not charged its full share of in-house costs. In-house costs were only 3.8 percent of direct costs while the expected charge should have been about 7 percent. In-house costs on civil works projects average about 10 percent and a 10-percent rate for this type of work was considered fair and reasonable and was agreed to by the Environmental Protection Agency. The administration of numerous cost codes by timekeepers, the one-hour time charge rule, and this being a new project resulted in administrative undercharges. The transfer was made to correct for undercharges to the Superfund project because of some probable timekeeping errors in handling labor cost codes. Personnel probably should have been charging the Superfund project but had not.

(3) **Interagency Agreement.** The interagency agreement for the Jibboom Junkyard cleanup effort states that reimbursement to the Corps is to be based on actual expenses incurred, and specific documentation supporting the costs is to be maintained. By signing the agreement, the Corps agreed to comply with the terms of the agreement. The percentage rates mentioned by command for in-house costs (paragraph 2a(2)) are maximum allowable ceilings or targets that may or may not be the actual expenses incurred. Costs charged to the project must be for actual, supportable expenses.

b. **Overhead.** Inappropriate overhead costs were also charged as a result of the cost transfers for labor. The automated accounting system of the Corps is programmed to add costs for District overhead based on direct labor charges. At the time of the cost transfer, a 41-percent

rate for district overhead was applied to labor charges. Therefore, about \$6,900 for District overhead was improperly charged to the construction project.

3. **Reimbursement.** Funds provided by the Environmental Protection Agency for Superfund work were improperly used for the district's flood control mission because of the cost transfers. The automated accounting system generates a bill to the Environmental Protection Agency around the 15th of the month for expenses charged against Superfund projects during the previous month. Labor expenses transferred to the Jibboom Junkyard Superfund construction project were billed to the Environmental Protection Agency during March 1987, and later reimbursed to the Corps from the Superfund Trust Fund. The expenses for flood control should have been paid by the appropriation for flood control and coastal emergencies.

#### **RECOMMENDATIONS AND COMMAND COMMENTS**

C-1 Transfer the improper labor and district overhead charges totaling about \$23,700 from the Jibboom Junkyard Superfund project to appropriate flood control projects. Return the \$23,700 to the Environmental Protection Agency.

Command agreed and stated on 9 December 1987 that the actual, invalid transferred amount of \$22,210.79 has been corrected and returned to the Environmental Protection Agency.

C-2 Strengthen the controls over procedures for processing cost transfers affecting Superfund projects. Specifically require:

- Detailed reasons for each transfer and supporting data that shows the transfer is proper.
- An approval by an individual other than the initiator before a cost transfer is made.

Command agreed and stated that the Resource Management Office will reissue, by third quarter FY 88, existing 1984 instructions as policy requiring specific documentation and approval procedures for cost transfers.

**ACTIVITIES FURNISHED COPIES OF THE AUDIT REPORT**

Copies of this report are being furnished to the following activities:

Inspector General, U. S. Environmental Protection Agency  
Assistant Secretary of the Army (Civil Works)  
Assistant Secretary of the Army (Financial Management)

The Inspector General

Director of the Army Staff

Chief of Public Affairs

Deputy Chief of Staff for Personnel

Deputy Chief of Staff for Logistics

Chief of Engineers

Commanders

U. S. Army Corps of Engineers

U. S. Army Criminal Investigation Command

U. S. Army Engineer Division, Missouri River

U. S. Army Engineer Division, South Pacific

Sixth Region, U. S. Army Criminal Investigation Command

Commandant, U. S. Army Logistics Management College

This report is not to be released outside the Department of the Army for 60 days. After that period has elapsed, the report may be released in accordance with the procedures prescribed in Army Regulation 340-17 and Department of the Army Memorandum 36-1. However, the results of audit will be furnished to the Inspector General, U. S. Environmental Protection Agency, who requested this audit.

CEAO (CESPK-IR/18 May 1988) 1st End Mr. Bandy/las/272-0061  
SUBJECT: USAAA Audit Report No. MW 88-601, Superfund Construction,  
Jibboom Junkyard Site, Sacramento, California

HQUSACE, WASH DC 20314-1000

12 JUL 1988

TO: Secretary of the Army, Inspector General; ATTN: SAIG-PA

1. This Command concurs with the Sacramento District's response except for the additional facts, and revised position in Recommendation B-2 stated below.

Recommendation B-1: Command agrees that a modification should have been issued during the closeout process to cover all variations in estimated quantities on the Jibboom Junkyard contract that were not covered in modifications previously issued. However; Command does not believe that issuing a modification at this juncture would serve any meaningful purpose, unless requested by the customer - EPA, since the contract has already been finalized. Guidance will be issued requiring future Superfund contracts to be modified during the closeout process, as recommended.

Recommendation B-2: The revised Command position is that in addition to obligating cost overruns on a Miscellaneous Obligation Document (DA Form 3717) and notifying the contractor accordingly, a modification will be issued during closeout to reconcile the total contract cost to the individual line items for all future Superfund contracts.

2. The report did not contain any reportable monetary benefits. In our opinion, there is no need to classify or protectively mark any portion of this report or responses thereto.

  
GEORGE K. WITHERS, JR.  
Major General, USA  
Deputy Commander

Rec'd  
MW 88-601  
13 JUL 88

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