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**Audit of USAID/Egypt's Monitoring of Construction  
Management Services for Water and Wastewater  
Construction Contracts**

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Report No. 6-26-93-05  
February 18, 1993





**UNITED STATES OF AMERICA  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
OFFICE OF THE REGIONAL INSPECTOR GENERAL/AUDIT**

February 18, 1993

**MEMORANDUM FOR D/USAID/Egypt, Henry H. Bassford**

**FROM :** RIG/A/Cairo, *Philippe L. Darcy*

**SUBJECT:** Audit of USAID/Egypt's Monitoring of Construction Management Services for Water and Wastewater Construction Contracts, Audit Report No. 6-263-93-05

Enclosed are ten copies of the subject audit report. We received the Mission's comments on a draft of the report and your written representation regarding the audited activities and have included them as Appendix II to the report. Representations were limited with regard to an essential confirmation and, in accordance with A.I.D./Washington guidance, Mission staff directly responsible for the audited activities did not provide written representations to you or us regarding these activities. Thus, our answer to the audit objective is qualified.

The report contains one recommendation with three parts: Nos. 1.1, 1.2 and 1.3. Each part of the recommendation has been resolved and will be closed when appropriate action is completed. Please provide us written notice within 30 days about any actions taken or planned to implement the recommendation.

I appreciate the cooperation and courtesies extended to my staff during the audit.

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# EXECUTIVE SUMMARY

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## Background

The effective application of A.I.D. internal controls to USAID/Egypt's four water and wastewater projects is important because of the projects' great complexity and \$1.4 billion costs. Reportedly the largest public health and environmental endeavor in the world, the facilities being constructed will serve over 9 million people -- almost 20 percent of Egypt's population. (See page 1.)

USAID/Egypt contracted with or financed contracts with five construction managers (professional engineering firms), at a cost of \$162 million, to oversee that construction is performed according to contract terms. Given the importance of the construction managers' role, USAID/Egypt's system needs to ensure the strongest possible construction manager performance. (See page 1.)

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## Audit Objective

We audited USAID/Egypt's monitoring of construction management services for water and wastewater projects in accordance with generally accepted government auditing standards (See Scope and Methodology, Appendix I). We conducted field work from March 1992 through September 1992 to answer the following question:

- Did USAID/Egypt establish and implement a system for monitoring construction management services in accordance with A.I.D. policies and procedures? (See page 2.)

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## Summary of Audit

The Director, USAID/Egypt, provided us written representations covering Mission responsibilities, full and accurate disclosure of financial and management information, compliance with contractual agreements and other matters. (The complete representation is contained in Appendix II of this report.) The Director limited his representations with

regards to instances of irregularities, noncompliance and/or violations of laws and regulations to those matters which to the best of his knowledge and belief should be contained in the records under audit or in verbal representations made by AID employees currently in the Mission. In accordance with A.I.D./Washington guidance, the Mission policy is that only the Director, not the officials directly responsible for the activities under audit, will provide written representation. (See Scope and Methodology, Appendix I.)

Except for the effects on the audit findings, if any, of not receiving acceptable representations as discussed above, USAID/Egypt established and implemented a system for monitoring construction management services in accordance with A.I.D. policies and procedures. An exception was that aspects of construction manager and project officer reporting needed improvement. (See pages 3 and 4.)

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## **Audit Findings**

### **Reporting By Construction Managers and Project Officers Can Be Strengthened**

Although USAID/Egypt established and implemented a monitoring system consisting of meetings and discussions, administrative approval of vouchers, and site visits in accordance with A.I.D. policies and procedures, USAID/Egypt did not require construction managers to provide information in monthly progress reports on quality assurance and control workloads or on actual versus budgeted man-months -- information we believe is essential in holding construction managers accountable and in monitoring their performance. In addition, USAID/Egypt did not implement several A.I.D. controls useful for contract specific monitoring and reporting such as the project officer's individual file for each contract, the project officer's contract monitoring plan, the construction manager's work plan, and the project officer's periodic assessment of contractor performance. (See page 4.)

This situation occurred because USAID/Egypt management did not emphasize these aspects of A.I.D.'s control system. Better construction manager reporting and implementation of the omitted controls would strengthen contractor accountability and provide the Mission better visibility over construction managers' activities for which the Mission committed \$162 million. (See pages 10 and 11.)

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## Summary of Recommendations

The report makes one multi-part recommendation that USAID/Egypt:

- Require construction managers to include objectively verifiable information about routine quality assurance and control performance in their progress reports;
- Require construction managers to include information about budgeted and actual person-months in their progress reports; and
- Require project officers to develop individual files for each construction manager contract, develop formal contract monitoring plans and periodic assessments of contractor performance, and obtain formal construction manager work plans. (See page 5.)

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## Management Comments and Our Evaluation

USAID\Egypt's management reviewed a draft of this report. Their written comments indicated that they agreed with our findings and had begun implementing actions to close all three parts of the recommendation. We considered USAID/Egypt's comments in preparing this final audit report. The comments are included in their entirety in Appendix II of this report. Based on those written comments, we consider Recommendation Nos. 1.1, 1.2 and 1.3 to be resolved. We will close these three parts of the recommendation upon receiving adequate documentation that USAID/Egypt's proposed actions have been completed. (See page 15.)

*Office of the Inspector General*

Office of the Inspector General  
February 18, 1993

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# INTRODUCTION

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## **Background**

Good internal controls are essential for maintaining the proper conduct of Government business with full accountability for resources. They also help achieve management objectives by serving as checks and balances against undesired actions. To assist employees in achieving management's objectives, A.I.D. Handbooks describe the methods and procedures adopted as internal controls.

The effective application of A.I.D.'s internal controls to USAID/Egypt's four water and wastewater projects is important because of the projects' great size, complexity and cost. Reportedly the largest public health and environmental endeavor in the world, the facilities being constructed will serve over 9 million people -- almost 20 percent of Egypt's population. At a cost of about \$900 million, nineteen contractors are building wastewater treatment plants, pump stations, elevated tanks, wastewater collectors, and culverts. To illustrate the enormous scale of the endeavor, more than 674 miles of pipe is being laid. To ensure successful completion of these efforts, USAID/Egypt needs a complete and effective system of controls.

As is its normal practice for large construction projects, USAID/Egypt contracted with or financed contracts with construction managers (five professional engineering firms), at a cost of about \$162 million, to ensure construction was performed according to contract plans and specifications. The construction managers act as representatives of the projects' financier (A.I.D.) and owner (the Government of Egypt). They check quality control, monitor construction progress and costs, certify facility completions, and perform many other tasks. In light of the construction managers' role, USAID/Egypt's system needs to ensure the strongest possible construction manager performance.

USAID/Egypt's Office of Urban Administration and Development is responsible for overseeing these projects and the related contracts. Its staff dedicated to this oversight consists of four project officers, three of whom are U.S. registered professional engineers, and eight additional professionals.

The earliest start of the four projects was in 1979 and the most recent in 1988. All four projects are to be completed in 1994 or 1995. As of September 30, 1992, about 80 percent of authorized project costs of \$1.2 billion had been expended.

Appendix III lists the construction managers covered by the audit and the related construction contracts, including the contract amounts.

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## **Audit Objective**

The Office of the Regional Inspector General for Audit/Cairo audited USAID/Egypt's monitoring of construction management services on water and wastewater projects to answer the following audit objective:

- **Did USAID/Egypt establish and implement a system for monitoring construction management services in accordance with A.I.D. policies and procedures?**

After discussions with Mission management, we reduced the two objectives shown for this audit in our Fiscal Year 1992 Audit Plan to the one objective shown above that focuses on USAID/Egypt's monitoring of construction managers. In conducting the audit, we selected four categories of internal controls for examination which we considered essential to an effective monitoring system: (1) meetings and discussions, (2) administrative approval of vouchers, (3) site visits, and (4) reporting. We will be reporting separately on USAID/Egypt's project evaluation system as a result of another audit currently underway. This audit did not assess whether USAID/Egypt had implemented every element of a monitoring system identified in A.I.D. policies and procedures.

In answering the objective, we tested whether USAID/Egypt followed applicable internal controls. Our tests were sufficient to provide reasonable, but not absolute, assurance that the answer to the audit objective is valid. We also included steps to detect abuse or illegal acts which could affect the audit objective. When we found problem areas, we performed additional work to identify the cause and effect of the problem and to make recommendations to correct the problem and/or the cause.

Appendix I contains a complete discussion of the audit scope and methodology.

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## **REPORT OF AUDIT FINDINGS**

Based upon discussions with Mission officials, the Director for USAID/Egypt provided us a written representation that USAID/Egypt is responsible for the internal control system and the fairness and accuracy of the accounting and management information relating to the audited activities and that, to the best of his knowledge and belief, USAID/Egypt had provided us all the financial and management information relating to the audit objective. Further, he stated that USAID/Egypt is unaware of any material instances where the information provided had not been properly and accurately recorded and reported, and USAID/Egypt has complied with all contractual agreements that could materially affect USAID/Egypt's monitoring of construction management services. (The complete representation is contained in Appendix II to this report).

Although the Director, USAID/Egypt, provided us these essential written representations, he limited his representation with regard to instances of irregularities, noncompliance and/or violations of laws and regulations to those matters which to the best of his knowledge and belief should be contained in the records under audit or to those matters which were elicited by the auditors during the course of the audit. He did not provide acceptable representations as to whether he is aware of any instances of irregularities, noncompliance with A.I.D. policies and procedures or violations or possible violations of laws and regulations for the activities under audit. Also, in accordance with A.I.D./Washington guidance of May 13, 1992, the Mission policy is that only the Director will sign a letter of representation. Therefore, other USAID/Egypt officials directly responsible for the audited activities, in this case the Associate Director for Development Resources, did not provide written representations to us or the Director confirming essential information. As a result, our answer to the audit objective is qualified to the extent of the effect of not having such representations.

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**Did USAID/Egypt establish and implement a system for monitoring construction management services in accordance with A.I.D. policies and procedures?**

Except for the effects on the audit findings, if any, of not receiving acceptable representations as discussed above, USAID/Egypt established and implemented a system for monitoring construction management services in accordance with A.I.D. policies and procedures. An exception was that aspects of construction manager and project officer reporting needed improvement.

Although USAID/Egypt established and implemented a monitoring system consisting of meetings and discussions, administrative approval of vouchers, and site visits in accordance with A.I.D. policies and procedures, USAID/Egypt did not require construction managers to provide information in monthly progress reports on quality assurance and control workloads or on actual versus budgeted man-months -- information useful in holding construction managers accountable and in monitoring their performance. In addition, USAID/Egypt did not implement several A.I.D. controls useful for contract specific monitoring and reporting such as the project officer's individual files for each contract, the project officer's contract monitoring plan, the construction manager's work plan, and the project officer's periodic assessment of contractor performance.

**USAID/Egypt established and implemented a system for meetings and discussions in accordance with A.I.D. policies and procedures.** Meetings were held frequently, usually weekly, and project files usually contained documentation of key meeting discussions. Normally such meetings were attended by the project officer, Mission local national engineers, representatives of the construction manager, and as appropriate the host government implementing agency and the construction contractor. The meetings usually focussed on construction progress and problems and how to resolve the problems.

**USAID/Egypt complied with A.I.D.'s requirements for administrative approval of contractors' vouchers.** We reviewed invoices submitted during the most recent 12 month period from March 1991 through February 1992 under the 5 construction management contracts and on 4 of the 19 construction contracts. The review, covering 129 invoices amounting to more than \$124 million of \$938 million expended through September 30, 1992, showed that each invoice had been reviewed and administratively approved by the project officer or his designee as required by A.I.D. procedures.

**USAID/Egypt established and implemented site visit procedures in accordance with A.I.D. policies and procedures.** The Mission Order on site visits, consistent with A.I.D. Handbook 3, Supplements A and B, requires project officers to visit major infrastructure projects at least monthly and to write a report giving the purpose of the visit, a summary of observations, and any action required. Our review of all 98 site visit reports made between March 1, 1991, and February 28, 1992, showed that USAID/Egypt's project officers usually complied with the Mission Order on

USAID/Egypt's project officers usually complied with the Mission Order on documentation and met the monthly requirement for visits. In some instances, where reports were absent or incomplete, project files contained other evidence of frequent site visits.

USAID/Egypt established and implemented A.I.D. policies and procedures on construction manager statements-of-work. A prerequisite for good reporting is a clear definition in the contract of the work to be done. USAID/Egypt had improved the statements-of-work in the construction manager contracts during the period covered by the audit. Recent statements-of-work adequately defined what work was to be done.

### **Reporting By Construction Managers And Project Officers Can Be Strengthened**

A.I.D. Handbook 3, Supplements A and B, state that Mission project officers should obtain informative contractor reports. In addition, project officers are advised to develop individual files for each contract, contract monitoring plans, contract work plans, and assessments of contractor performance. USAID/Egypt's contracts usually did not require construction managers to provide information in monthly progress reports on quality assurance and control workloads or on actual versus budgeted person-months -- information useful in holding construction managers accountable and in monitoring their performance. Also, project officers did not develop individual files for each contract, contract monitoring plans, contract work plans, or assessments of contractor performance -- key elements of A.I.D.'s system to enhance contract specific monitoring and reporting. This situation occurred because USAID/Egypt management did not emphasize these aspects of A.I.D.'s control system. Better contractor reporting and USAID/Egypt's implementation of the omitted controls would strengthen contractor accountability and provide USAID/Egypt better visibility over construction managers' activities -- for which the Mission has committed \$162 million.

#### **Recommendation No. 1: We recommend that USAID/Egypt:**

- 1.1 require construction managers to include objectively verifiable information about routine quality assurance and control performance in their progress reports;**
- 1.2 require construction managers to include information about budgeted and actual person-months in their progress reports; and**
- 1.3 require project officers to develop individual files for each construction manager contract, develop formal contract monitoring plans and periodic assessments of contractor performance, and obtain formal construction manager work plans.**

A.I.D. Handbooks prescribe a system that includes contractor and project officer monitoring and reporting procedures. Such procedures include:

- contractor progress reports that provide objectively verifiable information on performance,
- the project officer's individual file for each contract,
- the project officer's contract monitoring plan,
- the contractor's work plan, and
- the project officer's periodic assessments of contractor performance that are provided to higher management and the contracting officer.

The following sections discuss these A.I.D. Handbook recommended procedures and the problematic condition of USAID/Egypt's controls with respect to the procedures.

**Construction Manager Progress Reports** - According to A.I.D. Handbook 3, Supplements A and B, contractors should provide project officers informative reports. Such reports should provide the information needed by the project officer to objectively verify the construction manager's performance. The project officer should follow-up on variances from planned activities and problems identified in the reports.

Although progress reports submitted to USAID/Egypt's project officers contained information on contractor progress, problems, and important events, **progress reports provided almost no objective information on what the construction managers did regarding routine quality assurance and control work.**

Construction managers' duties varied depending on the phase of the project (such as design, construction, or maintenance). A major responsibility during the construction phase was quality assurance and control work. Such work entailed many labor-intensive, repetitive tasks, such as checking site measurements or line and grade for the laying of pipe.

Monitoring the construction manager's performance in the quality assurance and control area is important because such work accounts for significant A.I.D. expenditures. Based on information provided by the five construction managers monitored by USAID/Egypt, we estimate that \$81 million (50 percent) of the \$162 million in construction manager contract costs was for quality assurance and control services. Most construction managers said they believed it was feasible and in fact advisable for them to provide A.I.D. information about major quality assurance and control tasks through monthly progress reports.

Progress reports should also provide data on actual versus budgeted person-months. A.I.D. Handbook 11, Attachment 1N states that for level-of-effort type host country contracts, the contract should express the contractor's obligation in terms of person-months to be used in pursuit of stated objectives, usually broken down by specialty. This

provides the project officer an objective means of comparing the contractor's performance with the contract terms. Four of the five contracts for construction management services are direct contracts rather than host country contracts. Although A.I.D. Handbooks for A.I.D. direct contracts do not require information on person-months, sound management practice dictates use of such information for direct contracts. Accordingly, we believe all construction managers' monthly progress reports should include information on actual versus budgeted person-months.

Three of the five construction managers were required to report actual person-months and two were required to report budgeted person-months. However, only one of the five reported both types of information. Thus, **USAID/Egypt had information on actual versus budgeted person-months for only one of the five construction managers.**

Construction managers did not report on quality assurance and control workloads and person-month usage in monthly reports because their contracts did not require such reporting. We believe more complete reporting is clearly justified for these construction manager level-of-effort type contracts which account for \$162 million in A.I.D. financing. According to the July 1992 report of the joint A.I.D.-OMB SWAT team, shortcomings in monitoring and reporting are common throughout A.I.D. for such contracts. Furthermore, the report expresses general concern about the loss of administrative control caused by the wide-spread use of level-of-effort type contracts. Given this concern, we believe USAID/Egypt should aggressively use its progress reporting system to hold construction managers accountable and to monitor performance.

Quality assurance and control is necessary because there is always the possibility that construction contractors operating under fixed price contracts may, in holding down costs and maximizing profits, reduce needed quality and workmanship. Without effective construction management there is a real danger that at some point in time a construction contractor may not live up to his end of the bargain. Given the size and costs of the water and wastewater projects and the potential problems which can arise if USAID/Egypt is not fully informed about the construction managers' activities, the added assurance provided by more complete reporting by the construction managers on the fixed price construction contracts they oversee is clearly justified.

**Operating Contract File** - According to A.I.D. Handbook 3, Supplements A and B, the contract monitoring process begins with the project officer establishing an operating file for each contract. The file should contain copies of the contract,



**Zenein Wastewater Treatment Plant Near Cairo**



**Pyramids Pump Station Near Cairo**

amendments, relevant memoranda, cables, contractor reports, site visit reports, and other pertinent documents. This working file facilitates contract specific oversight by the project officer and provides "institutional memory" for other Mission personnel who may not be familiar with the contract.

Nevertheless, **USAID/Egypt project officers were not required to and did not maintain individual files for construction manager contracts.** Instead, information was dispersed in several other files, for instance in an action memo file and an implementation letter file. We believe the addition of individual files, as called for by the A.I.D. Handbook, would strengthen USAID/Egypt's system of administrative control and contract monitoring.

**Contract Monitoring Plan** - A.I.D. Handbook 3, Supplement B advises the use of contract monitoring plans for host country contracts. There is no prescribed format for such plans, but the Handbook guidance recognizes that effective contract monitoring is a complex task and advises the project officer to prepare a schedule or checklist to facilitate monitoring contractor compliance with contract terms. The plan should be keyed to specific contract events, responsibilities and requirements. As explained earlier, 4 of the 5 contracts for construction management services were AID direct contracts. Although A.I.D. Handbooks do not require use of a contract monitoring plan for A.I.D. direct contracts, normal management practice dictates use of such plans. USAID/Egypt's contracting officer stated that he desires such plans for all contracts.

However, **USAID/Egypt project officers were not required to and did not prepare contract monitoring plans.** We believe such plans would strengthen USAID/Egypt's system of administrative control and contract specific monitoring.

**Contractor Work Plans** - A.I.D Handbook 3, Supplement A requires firms with A.I.D. direct contracts to prepare implementation or work plans. Such plans are an important tool to track contractor performance. They are usually developed by the contractor and submitted to the project officer for approval and are designed to implement the contract's statement-of-work. One of the five construction management contracts is a host country contract. Although A.I.D. guidance does not require work plans for host country contracts, we feel that prudent management practice would involve the use of such plans.

**Contractor work plans were not prepared for any of the five construction manager contracts.** We believe such work plans would strengthen USAID/Egypt's system of administrative control and contract specific monitoring.

**Assessments of Contractor Performance** - A.I.D. Handbook 3, Supplements A and B, advise project officers to periodically assess contractor performance and provide assessment reports to the contracting officer and higher management. Such assessment reports would provide A.I.D. management with an overall perspective on the contractor's performance and could be helpful during future procurements and in the event of contract disputes.

However, **USAID/Egypt project officers were not required to and did not prepare periodic written assessments of construction manager performance.** A.I.D. Handbook 3 recommends periodic assessments of contractor performance because such assessments provide an overview of the contractor's performance in the permanent file for possible use by evaluators, Mission legal and contracting staff, and other interested parties. The assessments serve the singular purpose of focussing on individual contracts as opposed to the overall project.

The previously discussed management controls were not present because USAID/Egypt management did not emphasize those particular contract specific monitoring controls. This lack of emphasis is not particular to USAID/Egypt. In fact, it is present throughout A.I.D.

The August 1992 A.I.D. action plan for implementing the recommendations of the joint A.I.D.-OMB SWAT team expressed concern about the lack of focus on contract specific monitoring throughout A.I.D. The plan called for "increased scrutiny of contract administration and contractor performance." A.I.D. has taken the SWAT team findings so seriously that it wants to include contract management as a critical element in performance appraisals at all management levels, where appropriate, for the year beginning in April 1993. We believe USAID/Egypt should review the contract monitoring aspects of its administrative control system and take action to implement the elements recommended by A.I.D.'s Handbooks and highlighted in this report.

We recognize that USAID/Egypt has in place controls which help lower the risk that project construction will be substandard and that major problems will be unnoticed. Thus, the Mission emphasizes frequent discussions with construction managers, careful contractor selection, timely site visits, and various reports. Moreover, the Mission's system recognizes that the experience, commitment and daily involvement of its professional engineers are crucial to the monitoring of construction projects.

However, this emphasis does not fully provide the benefit of a formal system of internal controls to monitor construction managers' activities. Construction managers must be held closely accountable for all their actions. If USAID/Egypt does not do this well, its \$1.4 billion investment in water and wastewater project construction could be at risk. A.I.D. does not expect or require Mission engineers to oversee such an enormous span of construction activity by themselves. This is why standard procedures allow the use

of construction managers and to that end A.I.D. has committed \$162 million. Accordingly, the Mission must make doubly sure that those managers are doing their job -- and thus the need for a complete system of formal internal controls.

In conclusion, USAID/Egypt's internal controls for monitoring and reporting on construction manager activity could be further strengthened. Construction managers should be required to report more information on quality assurance and control work and on budgeted versus actual person-months. Such information would enable project officers to better monitor the construction managers' performance in those areas. In addition, USAID/Egypt's administrative control system lacks several A.I.D. system elements for monitoring and formally reporting on construction manager performance. These are individual files for each contract, formal contract monitoring plans, construction manager work plans, and periodic project officer assessments of construction manager performance. Implementing these procedures would strengthen USAID/Egypt's system for monitoring and reporting on the construction managers' performance.

# **REPORT ON INTERNAL CONTROLS**

This section provides a summary of our assessment of internal controls for the audit objective.

## **Scope of Our Internal Control Assessment**

We performed our audit in accordance with generally accepted government auditing standards, except that the USAID/Egypt Director did not provide us acceptable representations in all essential respects and, in accordance with A.I.D./Washington guidance, the Mission official directly responsible for the audited activities did not provide written representations relating to the activities to support the representation made by the USAID/Egypt Director. (A description of the representations USAID/Egypt made is included in the Scope and Methodology section of this report; and Appendix II contains the audit representation letter.)

Generally accepted government auditing standards require that we plan and perform the audit to fairly, objectively and reliably answer the audit objectives. Those standards also require that we:

- Assess the applicable internal controls when necessary to satisfy the audit objectives; and
- Report on the controls assessed, the scope of our work, and any significant weaknesses found during the audit.

We focused our assessment of internal controls on those applicable to the audit objective and not to provide assurance on the overall internal control structure. Furthermore, the limitations in the Mission's representations are sufficient to preclude an unqualified opinion on the reliability of the internal controls related to the audit objectives. Therefore, our opinions on the adequacy of internal controls are qualified to the extent of the effect such representations may have, if any, on our audit results.

For the purposes of this report, we have classified significant internal control policies and procedures applicable to the audit objective by category. For each category, we obtained an understanding of the design of relevant policies and procedures and determined whether they had been placed in operation. We have reported these categories as well as any significant weaknesses under the applicable section heading for the audit objective.

### **General Background on Internal Controls**

Under the Federal Managers' Financial Integrity Act and Office of Management and Budget implementing policies, A.I.D. management is responsible for establishing and maintaining adequate internal controls. The U.S. General Accounting Office has issued "Standards for Internal Controls in the Federal Government" to be used by agencies in establishing and maintaining internal controls.

The objectives of internal control policies and procedures for Federal foreign assistance programs are to provide management with reasonable, but not absolute, assurance that resource use is consistent with laws, regulations, and policies; resources are safeguarded against waste, loss and misuse; and reliable data are obtained, maintained, and fairly disclosed in reports. Because of inherent limitations in any internal control structure, errors or irregularities may occur and not be detected. Moreover, predicting whether a system will work in the future is risky because conditions may change or the system itself may not be properly administered.

### **Conclusion for the Audit Objective**

The audit objective was to determine if USAID/Egypt established and implemented a system for monitoring construction management services in accordance with A.I.D. policies and procedures. In planning and performing our audit, we considered applicable internal control policies and procedures cited in A.I.D. Handbooks 3 and 11 and Mission Order 3-20 dated February 19, 1991. For the purposes of this report, we classified the relevant policies and procedures into the following categories: meetings and discussions, administrative approval of vouchers, site visits, and project officer and contractor reporting.

Except for the effects, if any, of not receiving acceptable representations, as discussed above in the Scope of our Internal Control Assessment, our tests showed that USAID/Egypt's controls were logically designed and consistently applied, except USAID/Egypt did not:

- require construction managers to include in their progress reports information about routine quality assurance and control work or on actual versus budgeted person-months, and
  - establish several A.I.D. controls for contract specific monitoring, including the project officer's operating file for each contract, the project officer's contract monitoring plan, the construction manager's work plan, and the project officer's periodic assessment of contractor performance.
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## **MANAGEMENT COMMENTS AND OUR EVALUATION**

USAID/Egypt agreed with the report's findings and all parts of the recommendation and agreed to implement actions which, if taken, should strengthen the system of internal controls for monitoring construction management contracts. Management agreed to require construction managers to include in their monthly reports information on quality assurance work and on budgeted versus actual person-months. Management also agreed to implement other recommended controls including semi-annual contract monitoring schedules or plans and monthly contractor work plans. Management further agreed to post a list of documents on each file cabinet to enable easier location of contract related documents; and to add to the Quarterly Report a statement assessing construction manager performance. Management's comments are included in their entirety in Appendix II of this report.

Management's planned actions on the report's recommendations were responsive and should strengthen USAID/Egypt's administrative system for monitoring and reporting on construction managers' performance. Based on management's proposed actions, we consider Recommendation Nos. 1.1, 1.2 and 1.3 to be resolved. We will close these three parts of the recommendation when documentation is provided showing that the proposed actions have been completed.

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## SCOPE AND METHODOLOGY

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### Scope

We audited USAID/Egypt's monitoring of construction management services in accordance with generally accepted auditing standards, except as discussed below with regard to the extent of representations made by Mission officials.

Government Auditing Standards require auditors to obtain representation letters when the auditors deem the letters useful. The Office of the Inspector General deems them necessary evidence to support potentially positive findings. We requested USAID/Egypt's management to furnish a written representation regarding this audit assignment. Based on discussions with Mission officials, USAID/Egypt's Director provided us a written representation that USAID/Egypt is responsible for the internal control system and fairness and accuracy of the accounting and management information relating to audited activities and that, to the best of his knowledge and belief, USAID/Egypt had provided us all the financial and management information related to our audit objective. Further he stated that USAID/Egypt is unaware of any material instances where the information provided had not been properly and accurately recorded and reported, and USAID/Egypt had complied with all contractual agreements that could materially affect the Mission's monitoring of construction management assistance. (The Director's representation is contained in Appendix II to this report.)

Although the Director, USAID/Egypt provided us with these essential written representations, he limited his representations with regard to instances of irregularities, noncompliance and/or violations of laws and regulations to those matters which to the best of his knowledge and belief should be contained in the records under audit or in verbal representations made by A.I.D. employees currently in the Mission for the activities under audit. In accordance with A.I.D./Washington guidance of May 13, 1992, the Mission policy is that only the Director will sign a letter of representation.

Therefore, other USAID/Egypt officials directly responsible for the audited activities, in this case the Associate Director for Development Resources, did not provide written representations to the Director or to us confirming essential information. Therefore our answer to the audit objective is qualified to the extent of the effect of not having such representations.

We conducted the audit from March 1992 through September 1992 and covered USAID/Egypt's system for monitoring construction management services for the period February 1, 1991, through February 29, 1992.

We limited our universe to construction managers for projects currently under construction in the water and wastewater sector in USAID/Egypt's Office of Urban Administration and Development. This involved 4 projects (Cairo Sewerage II, Cairo Water II, Alexandria Wastewater, and Provincial Cities Development) and 5 construction managers responsible for managing 19 construction contracts. As of September 30, 1992, USAID/Egypt has committed about \$1.2 of the \$1.4 billion authorized for these four projects. The five construction managers had been hired at a cost of \$162.3 million to provide construction management services for the projects' 19 construction contracts.

We conducted our audit work at USAID/Egypt's Office of Urban Administration and Development and at the following five construction manager work sites in Egypt: AMBRIC, CDM, and CH2M-Hill -- all located in Cairo, WWCG located in Alexandria, and Montgomery Harza located in Fayoum, Egypt.

We met with project officers and other project staff to obtain copies of contracts, construction manager monthly reports, change orders, site visit reports and vouchers, and other relevant information in project contract files to enable us to assess USAID/Egypt's system for monitoring construction management services. We examined the construction management contracts to determine the kinds of services to be provided by construction managers. We also reviewed A.I.D. Handbooks 3 and 11, and Mission Order 3-20 dated February 19, 1991 and other guidelines and discussed any discrepancies or omissions with project officers and contract staff when guidelines and requirements appeared not to have been followed. Additional information on the kinds and sources of information used during the audit and on audit techniques used are given in the following methodology section. We examined internal controls related to the audit objective, reported on the controls, and considered prior audit findings when applicable to the areas under review. We only relied on computer generated data to determine order of magnitude. Therefore, we did not establish the reliability of this data.

The audit covered USAID/Egypt's system for monitoring construction management services and did not address a related system covering the monitoring of the design of such projects. Since the audit was limited to identifying and testing compliance with A.I.D.'s policies and procedures, we did not test for compliance with laws and regulations.

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## **Methodology**

### **Audit Objective One**

The objective of this audit was to determine if USAID/Egypt established and implemented a system for monitoring construction management services in accordance with AID policies and procedures. To accomplish this objective, we examined AID Handbooks and Mission Orders and questioned project officers to identify the techniques that make up USAID/Egypt's monitoring system for construction management services. We identified the following categories of control techniques: meetings and discussions, administrative approval of vouchers, site visits, and reporting. To determine whether or not USAID/Egypt had established and implemented controls in accordance with A.I.D. policies and procedures, we used the following methodology:

#### **1 - Meetings and Discussions**

Because our review of USAID/Egypt's system disclosed this to be a low risk area, we limited our work to (1) a preliminary review of project files for three of the construction managers to determine whether correspondence evidencing meetings was being received; and (2) an interview with the Office Director to determine if this information was useful. We found that this category of controls had been established and was being operated.

#### **2 - Administrative Approval of Vouchers**

We reviewed parts of AID Handbook 3, Supplements A and B, addressing the requirement for project officers to administratively review and, if appropriate, approve vouchers submitted by contractors. To determine whether or not USAID/Egypt complied with this requirement, we selected all five construction managers and judgementally selected the four largest construction contractors working under their supervision. These contractors accounted for 44 percent of the total commitments for the 19 contracts.

These contractors had submitted 129 vouchers valued at more than \$124 million during the audit period. After identifying project officers designated to review and approve project vouchers, we examined all 129 vouchers to determine if they had been reviewed and administratively approved by the designated project officer.

### 3 - Site Visits

We reviewed Mission Order 3-20 to obtain criteria for the conduct of site visits including their frequency, the need to document such visits, and the type of information to be reported. We reviewed all site visit reports prepared by project officers during the 12 month period ending February 28, 1992. We examined them to determine whether the project officer had complied with the Mission Order concerning documentation, visit frequency, and report content. Where report content differed from the Mission Order, or visits were not properly documented, we brought this to the attention of the responsible official. We also examined the reports to determine whether project officers were using visits to verify reported information.

### 4 - Reporting

We reviewed A.I.D. Handbook 3, Supplements A and B to identify the control procedures to support reporting. Accordingly, we identified the following control procedures: (1) development of contract work statements, (2) maintenance of contract files, (3) development of project officer contract monitoring plans, (4) development of construction manager work plans, (5) monthly progress reporting by the construction managers, and (6) project officer reporting to A.I.D. management. Through discussions with project officers we determined that the following control procedures in support of reporting were not being conducted: (1) maintenance of contract files, (2) development of project officer monitoring plans, (3) development of construction manager work plans, and (4) formal project officer reporting to A.I.D. management. We conducted no tests of these procedures because project officers advised us that these procedures were not in place. We therefore limited our additional work on reporting procedures to assessments of the adequacy of work statements and the adequacy of monthly reporting.

To assess the adequacy of work statements, we examined work statement tasks for all five construction manager contracts to determine whether they clearly defined what the construction manager was to do. To assess the adequacy of monthly progress reporting we determined (1) whether construction managers complied with the requirement to provide monthly progress reports, (2) whether construction managers reported required information, and (3) whether required reporting was sufficient to enable A.I.D. to hold

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construction managers accountable for performance. In making these determinations we ascertained whether or not construction managers submitted a progress report for the 3 sample months of the 13 month period covered by our audit. We also examined each of the five construction manager contracts to determine information to be reported to A.I.D., reviewed three monthly progress reports obtained from each of the five construction managers for the period covered by our audit to determine information reported, and compared required reporting with actual reporting. We believed that examining three reports from each construction manager would be sufficient to establish the pattern or structure of reporting being done. Lastly, to enable us to determine if required reporting was sufficient to hold managers accountable for performance, we identified quality assurance tasks contained in each of the five construction manager contracts and determined how much of this information was required to be reported to A.I.D.

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UNITED STATES AGENCY for INTERNATIONAL DEVELOPMENT

CAIRO, EGYPT

FEB 11 1993

**MEMORANDUM**

RECEIVED  
FEB 11 1993

TO: Philippe L. Darcy, RIG/A/C

FROM: Christopher D. Crowley, D/DIR

SUBJECT: Mission's Response on Draft Audit Report of  
USAID/Egypt's Monitoring of Construction  
Management Services for Water and Wastewater  
Construction Contracts

Before responding to the recommendations, we believe that the following comments from previous IG reports would provide additional information of the Mission's performance of subject:

The Provincial Cities Development Project (263-0161.03) February, 1991 audit executive summary stated that: "USAID/Egypt has established a comprehensive and adequate system for monitoring this project which conforms to A.I.D. standards and is generally effective in keeping Mission management informed about potential problems. The management system used for monitoring construction activities is extensive and well coordinated with the GOE implementing organization."

The Alexandria Wastewater System Expansion Project (263-0100) executive summary stated that: "Despite these difficulties, the AWW project is well on the way to its scheduled completion in December, 1992. Major completed or near-completed system components include pump stations, sewage tunnels and collectors and the East Treatment Plant. Work on the West Treatment Plant is well underway, and the plant should be completed in 1991. Each facility we visited appeared to be well built. We believe the photos included in this report illustrate the high quality of workmanship and materials that went into construction of these facilities. Overcoming the major obstacles which have arisen and maintaining project momentum over more than a decade are attributable, in our opinion, to the laudable perseverance and technical capabilities of USAID/Egypt and WWCG personnel."

In a financial audit of the CMC on the Cairo Water Project, only \$2,800 out of \$300,000 in costs were questioned. In another financial audit under the Cairo Wastewater Project, only \$36,968 out of \$6.1 million in costs were questioned.

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We believe that these audits demonstrated that the Office of Urban Administrative and Development (UAD) has an adequate system in place for monitoring our projects. It is a system that relies heavily on frequent visits to construction sites, to the offices of construction management contractors and to the offices of our host country counterparts. Indeed the present audit report reviewed 98 site visit reports for the period March 1, 1991 to February 28, 1992 and stated that meetings were held frequently, usually weekly, and project files contained documentation of key meeting decisions. We believe there is no substitute for frequent contact with the GOE, contractors and on site inspection of construction.

We do agree that aspects of construction manager and USAID project officer reporting can be strengthened. The following outlines how we propose to deal with the audit recommendations:

**Recommendation No. 1:**

- 1.1 "require construction managers to include objectively verifiable information about routine quality assurance and control performance in their progress reports;"

**Mission's Response:**

Mission will require that construction management contractors summarize in their monthly reports what quality assurance work was done in the previous month, results, comments on the results and what will be done during the next month. Based on the above, Mission requests that this recommendation be resolved and closed upon issuance of a letter to the CMCs requesting them to implement the above requirement.

**Recommendation No. 1:**

- 1.2 "require construction managers to include information about budget and actual man-months in their progress reports;"

**Mission's Response:**

We will require that construction management contractors include in their monthly reports a breakdown of budgeted vs. actual man-months. Based on the above, Mission requests that this recommendation be resolved and closed upon issuance of a letter to the CMCs requesting them to implement the above requirement.

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**Recommendation No. 1:**

- 1.3 "require project officers to develop individual files for each contraction management contract, develop formal contract monitoring plans and periodic assessments of contractor performance, and obtain formal construction manager work plans; or justify why any procedure is not necessary."

**Mission's Response:**

The issue of individual files for each contract was discussed with the audit team in great detail. Mission believes that single files would be impossible given the size and length of many contracts, for instance AMBRIC has been going on for 13 years and there are over 60 amendments to their contract. Also, many duplicate copies of action memos, implementation letters, and correspondence would have to be made since it is essential that the current filing system that groups all implementation letters, action memos and correspondence in one file be maintained. However, to improve the current filing system, UAD will post a list on the front of each file cabinet for all the files in a cabinet. This would enable someone unfamiliar with the files to locate documents pertinent to a particular contract.

As pointed out in the audit, AID Handbooks do not require use of a contract monitoring plan. The UAD project officers monitoring construction management contracts key their activities to events that are controlled by the construction contractor. The CMCs really can only react to the activities of the construction contractor since the construction contractor can vary his activities to suit his own planning. The CMCs do not determine the construction contractor's schedule. Each of the project officers uses a combination of site visits, reviews of reports, and visits to their host country counterparts to monitor activities. Each project officer in UAD will develop on a semi-annual basis projections of major events such as field trips, reviews of major reports, drafting of documents such as PILs, and visits to host country counterparts. In the next six month period, the project officers will report on what actually happened and submit a new schedule.

The recommendation of formal assessments of construction manager performance received a great deal of discussion with the audit

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team. UAD constantly is evaluating contractor performance and discussing its observations with construction management contractors. We believe this is in accordance with the handbooks which encourage informal discussion. In cases where deficiencies are serious, they are documented in writing to both senior management and the contractors. We would, however, propose to add to the Quarterly Reports a statement of the construction managers' timeliness in meeting schedules for the delivery of various reports and the degree to which they are fulfilling the other terms of their contract.

Construction management contractors will be required to submit monthly work plans in their monthly reports. These work plans would include the major engineering, construction contract administration, quality assurance, cost and schedule, field engineering and administration activities that would be carried out in the next two months.

Based on the above, Mission requests that this recommendation be resolved and closed upon implementation of the above actions.

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UNITED STATES AGENCY for INTERNATIONAL DEVELOPMENT

CAIRO, EGYPT

OCT 29 1992

RECEIVED  
29 OCT 1992

Mr. Philippe L. Darcy  
Regional Inspector General  
for Audits  
Cairo, Egypt

Dear Mr. Darcy:

This Representation Letter is being issued in accordance with Agency guidance in response to the audit of "USAID/Egypt's Monitoring of Construction Management Services for Water and Wastewater Construction Contracts" recently conducted by your Staff.

Based upon discussions with Mission Staff, and taking into account identified staffing constraints and vulnerabilities as expressed in Mission ICAs, to the best of my knowledge and belief, I confirm that all appropriate financial records in the possession and under the control of USAID/Cairo relating to the function being audited have been made available to you. To the best of my knowledge and belief, the records made available to you are accurate and complete, and they fairly represent the status of Monitoring of Construction Management Services for Water and Wastewater Construction Contracts within the Mission. To the best of my knowledge and belief, in conjunction with A, B, C and D below, those records, and verbal representations of AID employees currently in the Mission, should have identified any instances of non-compliance or irregularities, or violations of laws and regulations as those terms may be defined by or perceived by the Inspector General. Specifically I represent that:

- (A) USAID/Egypt is responsible for the internal control system, for the fairness and accuracy of accounting and management information for the function under audit. USAID/Egypt to the best of my knowledge and belief exercises its best efforts to ascertain and follow

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applicable U.S. laws and AID regulations and AID interpretations of those laws and regulations.

- (B) To the best of my knowledge and belief, and based on discussions and verbal representations by others in the Mission, USAID/Egypt has made available to you or otherwise provided you at your request all financial and management information related to the audit objectives.
- (C) To the best of my knowledge and belief, except for any findings or other matters included in the audit report, USAID/Egypt is unaware of any material instances associated with the function being audited where financial or management information has not been properly and accurately recorded/reported.
- (D) To the best of my knowledge and belief, USAID/Egypt has complied with all contractual agreements, to the extent there are such agreements, which could have any material effect on Mission Monitoring of Construction Management Services for Water and Wastewater Construction Contracts.

Upon review of your draft report and following further discussion with my staff, I know of no events subsequent to the date of your draft report, (other than those which were included in our response to that report), which to the best of my knowledge and belief would materially alter the statements in (A) thru (D) above.

All representations made herein by me are made in light of my experience since my arrival at post.

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I request that this Representation Letter be included as a part of the official management comments on the draft report and that it be published therewith as an Annex to the report.

Sincerely yours,

A handwritten signature in black ink, appearing to read "H. Bassford", written in a cursive style.

Henry H. Bassford  
Director

**APPENDIX III**

<b>CONSTRUCTION MANAGERS AND THE WATER AND WASTEWATER CONSTRUCTION CONTRACTS THEY MANAGE AS OF 9/30/1992 <sup>1/</sup></b>			
<b>CONSTRUCTION MANAGER CONTRACTS</b>		<b>CONSTRUCTION CONTRACTS</b>	
<b>NAME</b>	<b>AMT. CMTD. (MIL. \$)</b>	<b>NAME</b>	<b>AMT. CMTD. (MIL. \$)</b>
AMERICAN BRITISH CONSULTANTS (AMBRIC)	\$70.7	HARBERT JONES FRU-CON FRU-CON SADELME NEW YORK AMERICAN INT. FRU-CON HARBERT JONES MORRISON KNUDSEN	\$114.9 29.7 44.8 14.0 34.0 9.6 44.6 10.3
SUBTOTAL	70.7		301.9
CAMP DRESSER & MCKEE INTERNATIONAL	10.0	ABB-SUSA SADELME NEW YORK	131.0 65.3
SUBTOTAL	10.0		196.3
WASTEWATER CONSULTANT GROUP	59.3	FISCHBACH MACLEAN GROVE FRU-CON FRU-CON HARBERT JONES PERINI	24.9 46.8 88.7 44.9 43.1 8.7
SUBTOTAL	59.3		257.1
MONTGOMERY HARZA	11.9	L.A WATER	58.5
SUBTOTAL	11.9		58.5
CH2M-HILL	10.4	MORRISON KNUDSEN MORRISON KNUDSEN	33.8 44.4
SUBTOTAL	10.4		78.2
<b>GRAND TOTAL</b>	<b>\$162.3</b>		<b>\$892.0</b>

1/ This data was provided to us by USAID/Egypt's Office of Financial Management from official USAID/Egypt records. We did not audit the accuracy of the records.

**APPENDIX IV****REPORT DISTRIBUTION**

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29'