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AUDIT OF
TELECOMMUNICATIONS I, II AND III
USAID/EGYPT PROJECT NOS. 263-0054,
263-0075 AND 263-0117
Audit Report No. 6-263-86-5
May 11, 1986

memorandum

DATE:

May 11, 1986

REPLY TO
ATTN OF:*for* Joseph R. Ferri, RIG/A/Cairo

SUBJECT:

Audit Report No. 6-263-86-5 dated April 30, 1986
Audit Of Telecommunications I, II And III
TO: USAID/Egypt Project Nos. 263-0054,
263-0075 And 263-0117

Mr. Frank B. Kimball, Director USAID/Egypt

This report presents the results of our Audit of Telecommunications I, II and III, USAID/Egypt Project Nos. 263-0054, 263-0075 and 263-0117. The objectives of this program results audit were to: (1) determine if adequate management attention had been directed to strengthening the operational and managerial capabilities of the National Telecommunications Organization (ARENTO); (2) evaluate compliance with AID regulations and (3) test the adequacy of internal controls.

With respect to these objectives, the audit showed that significant progress was made in improving the telecommunications system in Egypt. USAID/Egypt, however, was not taking all the steps necessary for ensuring that the system would be efficiently and effectively operated over the longer term. More than half of the recommendations made by U.S. consulting and evaluating contractors, directed to strengthening operations of the ARENTO organization, had yet to be implemented.

These conditions existed primarily because USAID/Egypt and ARENTO agreed to implement only those recommendations considered critical to the current project leaving the remainder for further consideration by ARENTO. ARENTO indicated interest in pursuing many of the recommendations, but was constrained, in part, by the lack of funds. Since ARENTO's requests for further technical assistance have not been approved by USAID/Egypt, ARENTO management may not be sufficiently strengthened to operate and maintain the telecommunications system to realize its full potential.

In addition, ARENTO did not achieve the internal rate of training set forth in its five-year plan. The consultant contractor assisted ARENTO in establishing the five-year plan in May 1982 to improve employee job performance and prepare for further expansion and modernization. The objective of the plan was to define training needs and to increase the number of employees trained each year until an acceptable rate of training was reached. Several factors caused ARENTO not to achieve planned levels: ARENTO did not establish a data base from which to identify job training requirements; classroom attendance was poor at training facilities; and courses, including a key course on Fiber Optics, failed to start on time or were discontinued. Also, a sufficient number of Program Developers were not nominated or trained. USAID/Egypt and ARENTO were not working to fully implement the consultants' training recommendations. The lack of training can prevent the development of the human resources needed to meet requirements of the expanded telecommunications system.

There was an adequate level of compliance with AID regulations in the areas reviewed, except that USAID/Egypt was not taking appropriate steps to ensure that AID guidelines for successfully completing projects were followed. Internal controls were appropriate and operating in a satisfactory manner in the areas tested.

We recommended that USAID/Egypt determine which of the consultants' open recommendations should be implemented, work with ARENTO to implement these recommendations, and establish a plan and a follow-up system. We also recommended that USAID/Egypt continue working with ARENTO to complete the computerized data-base system for job training requirements, resolve training attendance problems, complete the training courses on fiber optics techniques, and train a sufficient number of Program Developers.

USAID/Egypt did not disagree with the recommendations but stated that many actions attendant to Recommendation Nos. 1 and 2 have already been taken and they should be closed. The Office of Inspector General carefully reviewed the comments offered on the draft report and continues to believe that USAID/Egypt needs to resolve the consultants' open recommendations and work with ARENTO to overcome the problems in the training area. Your comments were considered in finalizing the report. Excerpts are included at the end of each findings section. The full text, without USAID/Egypt's attachments, are included as Appendix 1 to the report.

We appreciate the courtesies extended to the audit staff throughout the assignment by members of the Development Resources Division. Please provide us within 30 days any additional information related to actions planned or taken to implement the recommendations.

EXECUTIVE SUMMARY

Telecommunications I began in August 1978, was followed by II in August 1979, and by III in December 1979. The combined purposes of these AID projects are to assist Egypt's National Telecommunications Organization to improve and strengthen overall operations, training and management capabilities; and to install electronic exchanges, outside plant and related equipment in Cairo and Alexandria. The audit covered project activities in Cairo, Alexandria and Nasr City during the period from August 1978 to September 30, 1985. As of September 30, 1985, AID obligations totaled \$242 million and \$186.5 million had been disbursed. The project completion date was December 31, 1988.

The objective of this program results audit was to determine whether the National Telecommunications Organization's management capabilities had been strengthened as called for in the project agreements. Other objectives were to determine whether the project was in compliance with AID regulations and to test internal controls.

The audit showed that the project was progressing satisfactorily in terms of installing modern telephone exchanges, underground cable systems and other equipment. Undoubtedly, the telecommunications capability in Egypt has been greatly improved. The audit also indicated that further improvements were possible in the National Telecommunications Organization's capability to operate and maintain the system over the longer term and to achieve the training plans for improving future job performance. The projects were being accomplished in general compliance with governing AID regulations, except for general guidelines on successful completion of projects. There were no material weaknesses in internal controls.

A U.S. consultant was hired to advise and assist the National Telecommunications Organization to develop managerial and operational capabilities. But, many of the consultant's recommendations and those of a later evaluation team to improve planning, management, operations, maintenance and training were not fully implemented. USAID/Egypt and the National Telecommunications Organization agreed to focus on implementing only those recommendations considered relevant to the effective implementation of the

ongoing project, leaving a large number of unresolved recommendations. USAID/Egypt stated it recognized that the National Telecommunications Organization, like any growing utility, will need to expand its facilities, institutional capabilities, and training program. It said that any future AID assistance will take these needs into consideration. There was, however, no certainty of a future project or of the likely parameters of such a project. As a result, the recommended further improvements may not be achieved and the National Telecommunications Organization, and AID, may not get the full benefit of the funds invested.

We recommended that USAID/Egypt arrange with the National Telecommunications Organization to review and assess the status and applicability of the recommendations of the consultant contractor and the evaluation team and ensure that an implementation plan and follow-up system are in place for those recommendations meriting USAID/Egypt assistance. USAID/Egypt project officials disagreed with our assessment and stated that all actions associated with the recommendations had already been carried out. We continue to believe that the open recommendations of the consultants need to be resolved.

In the training area, which we considered vital to ensuring continuous effective operation and maintenance of the system, the consultant had assisted the National Telecommunications Organization to establish a 5-year plan to improve job performance and prepare for further expansion and modernization. The planned rate of training was not achieved.

We recommended that USAID/Egypt ensure that the problems that contributed to the lack of training, including an uncompleted data-base system, poor attendance, the delayed fiber optics training, and the training of program developers be corrected. Again, USAID/Egypt project officials disagreed with our assessment. They said that actions associated with completing and placing in operation a computerized data base to identify training requirements and establishing a fiber optics training course had already been completed. They also said that poor attendance at the training facilities was impossible to correct in any meaningful way. We continue to believe that USAID/Egypt needs to work with the Organization on solving its training problems.

Office of the Inspector General

AUDIT OF
TELECOMMUNICATIONS I, II AND III

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AUDIT OF
TELECOMMUNICATIONS I, II AND III

PART I - INTRODUCTION

A. Background

Egypt had not invested in modernizing its telecommunications network for over ten years. As a result, the Arab Republic of Egypt National Telecommunications Organization (ARENTO) required major renovations and expansion to meet current and projected demands. In April 1978, an AID-financed sector study provided a master development plan for Egyptian telecommunications rehabilitation and expansion. In August 1978, AID authorized Loan No. 263-K-047 (Project No. 263-0054) for \$40 million to assist ARENTO in financing: (a) improvement of its overall management; (b) training of its personnel; and (c) procurement of urgently needed equipment.

In August 1979, AID authorized follow-on Grant No. 263-0075 for \$80 million to replace obsolete telephone equipment with modern telephone electronic switching systems, underground cable for the outside plant, and related equipment for cooling and standby power generation for exchanges in Cairo and Alexandria. The grant also provided funds to continue the technical assistance to strengthen ARENTO's managerial and operational capabilities.

In December 1979, AID approved incremental Grant No. 263-0117 for \$122 million to increase assistance for exchanges, outside plant, and consulting services. This brought the total obligations under Telecommunication Projects I, II and III to \$242 million. Most of the assistance financed three major host government contracts with U.S. firms:

- (1) Consulting Services. A \$41-million contract, effective March 1980, for technical assistance, including supervision of major equipment installations, technical planning, finance and accounting, computerization of several ARENTO departments, billing improvements, operations and maintenance, and training.
- (2) Exchanges. A \$104.6-million contract, dated February 1982, to install eight electronic switching telephone exchanges in Cairo and Alexandria, including training and 24 months of guaranty operating and maintenance services.

- (3) Outside Plant. A \$77-million contract, dated June 1982, to construct underground electronic and optical cable systems, including training and 24 months of guaranty maintenance services.

As of September 30, 1985, obligations totaled \$242 million of which \$186.5 million had been spent. The amended project completion date is December 31, 1988.

The U.S.-financed assistance is part of a multinational effort to upgrade telecommunications in Egypt. The total expansion was estimated in 1978 at \$1.4 to \$2.5 billion.

B. Audit Objectives And Scope

The Office of the Regional Inspector General for Audit/Cairo made a program results audit of Telecommunications I, II and III. This review covered activities from inception of the projects on August 28, 1978 to September 30, 1985, and was done during the period from May to November 1985.

The survey phase of the audit showed that construction of facilities was proceeding satisfactorily. The survey also showed that many recommendations made by the U.S. consultants in Phase I for organizational improvements had not been adopted by ARENTO. As a result of the satisfactory technical progress, the audit concentrated on two areas of indicated weakness - organization and training.

The overall objective of the detailed phase of the audit was to determine if adequate management attention had been directed to implementing the consultant's recommendations, as well as those made by an evaluation contractor in June 1984. We did not evaluate the efficacy of the recommendations made by the consultants. The work in verifying the extent to which ARENTO had adopted the consultants' recommendations was limited by the lack of information made available by ARENTO. Accordingly, the audit relied extensively on the records of the consultant contractor and USAID/Egypt. The other audit objectives were to ascertain compliance with AID regulations and to test internal controls.

We visited facilities and interviewed officials at five of the eight AID-financed electronic equipment exchanges in Cairo and Alexandria, the ARENTO headquarters offices in Cairo, ARENTO training facilities in Hasr City, and offices of the three major U.S. contractors. The audit did not

include a detailed review of payments. Costs claimed by the consultant and reimbursed by USAID/Egypt were not reviewed because accounting records were located in the United States, and a non-Federal auditing firm was to review the consultant's direct costs under a USAID/Egypt contract.

The audit was made in accordance with generally accepted government auditing standards.

AUDIT OF
TELECOMMUNICATIONS I, II AND III

PART II - RESULTS OF AUDIT

The audit showed that adequate management attention had been directed to implementing certain of the consultant recommendations. However, disposition of numerous other recommendations bearing on ARENTO's ability to operate and maintain a greatly expanded system over the longer term and achievement of the training objectives have yet to be resolved. The project was being carried out in general compliance with AID regulations and internal controls were generally adequate.

The Telecommunications projects have contributed greatly to improving telecommunications in Egypt. After some delays in cutover to the new system, the electronic switching exchanges and other equipment were in operation and most of the outside plant facilities were completed. Seven old rotary switches were replaced by eight Electronic Switching Systems, five in Cairo and three in Alexandria. The new systems were providing improved service to approximately 120,000 subscribers. Moreover, the new equipment doubled the capacity for commercial lines in some areas. Most of the work to engineer, furnish, install and maintain telephone outside plant facilities for the new systems, and the junction exchange interconnections for the Cairo and Alexandria networks were completed; acceptance tests were being made on the outside plant. Also, customer rates were increased, resulting in improved revenues.

Technical assistance was provided to ARENTO under USAID/Egypt-financed contracts for institutional strengthening of activities in the areas of fundamental planning, training, finance and administration, organizational structure, tariff rates and computer systems and applications. With this assistance there has been a recognized improvement in service attributable to the new equipment. Continued involvement by USAID/Egypt was needed, however, to further the progress made and to strengthen ARENTO's ability to more efficiently manage and operate the telecommunications system now and in the future.

We recommended that USAID/Egypt continue to work with ARENTO to implement the recommendations made by the consultant contractor and the evaluation team and to achieve project training objectives.

A. Findings And Recommendations

1. USAID/Egypt Should Continue Working To Implement Recommendations To Strengthen The ARENTO Organization

USAID/Egypt was not taking all the steps necessary for ensuring that the project would be efficiently and effectively operated over the longer term, as discussed in the guidelines in Handbook 3 for completing projects. More than half of the recommendations made by U.S. consulting and evaluating contractors, directed to strengthening operations of the ARENTO organization, had yet to be implemented. The contractor's role was to advise and assist ARENTO to improve its planning, management, and training functions and to contribute to the more effective operation and expansion of ARENTO services.

The above conditions existed, primarily because USAID/Egypt and ARENTO agreed to implement only those recommendations considered critical to the current project, leaving the remainder for further consideration by ARENTO. ARENTO indicated interest in pursuing many of the recommendations, but was constrained, in part, by the lack of funds. Since ARENTO's requests for further technical assistance have not been approved by USAID/Egypt, ARENTO management may not be sufficiently strengthened to operate and maintain the telecommunications system to realize its full potential.

Recommendation No. 1

We recommend that USAID/Egypt:

- a. determine which of the open recommendations made by the consultant (Exhibit 1) and the evaluation team (Exhibit 2) should be implemented to protect the investment already made;
- b. work with ARENTO to implement those recommendations; and
- c. ensure that a time-phased plan and follow-up system are established to implement the recommendations.

Discussion

..."A project can ... only be considered complete when it is successfully generating a stream of benefits and helping the

intended beneficiaries in the manner and at the rate envisioned in the initial project, or, if modified, final project design" (AID Handbook 3, Chapter 14A, Project Completion and Post Project Considerations). Chapter 14D, AID Responsibilities, adds that ... "Managing all of the inputs to produce outputs and then moving into the successful generation and delivery of benefits may be the B/G (Borrower/Grantee) agency's most marginal capability, especially when a new organizational undertaking is involved ... (and) in most cases, only a little more support and encouragement are all that are needed to help the B/G make the project a permanent success."

In March 1980, a U.S. consulting firm was hired to provide \$41 million of construction supervision and advisory services to ARENTO. Part of the consultant's role in Phase I of the project was to examine, evaluate, and make recommendations to ARENTO in defined operational and managerial areas.

By May 1982 under the Phase I task, the consultant had made 147 recommendations to: (a) reorganize ARENTO's line and staff functions; (b) improve program management and control activities; (c) establish financial and accounting procedures; (d) effect purchasing and internal controls; (e) develop training capabilities; (f) establish a data processing center; and (g) improve ARENTO's operations and services.

In December 1982, an amendment to the consultant's contract authorized the second phase of the project (Phase II). Under Phase II, certain of the Phase I recommendations were selected by USAID/Egypt and ARENTO as most necessary for AID-financed consultant assistance to ARENTO. No specific timetable was established for disposing of all of the recommendations, although it was recognized that at least some of those remaining would be appropriate for consideration in a follow-on project financially supported by USAID/Egypt.

Review of 121 of the 147 total recommendations showed that, from May 1982 to August 1985, only 44 had been fully adopted. Thus, 77 (or 64%) of the 121 recommendations reviewed had either not been implemented or were only partly implemented over three years later. We could not determine the status of the remaining 26 recommendations.

The 103 recommendations (77 not fully implemented and 26 with undetermined status), listed in Exhibit 1 were reviewed with the Project Officer subsequent to issuance of the draft audit report on March 17, 1986. The Project Officer disagreed with the status shown for 15 recommendations. Disagreement was generally based on undocumented observations by the Project Officer of the status of the recommendations. Assuming the Project Officer's observations were correct, 88, or 60 percent, of the 147 recommendations made would have been left for ARENTO to deal with as of March 1986.

In order to assess project progress and impact, and to determine the need for additional assistance, a second U.S. firm, comprised of a three-man contract team, was hired in May 1984 for \$94 thousand. This team reported concern with ARENTO's capability to satisfy the public demand for telephones in the face of the anticipated high growth rate over the next 15 years. In its report, dated June 1984, the team made 48 recommendations, the first of which stressed that ARENTO should seriously consider the recommendations made previously by the consultant contractor.

According to our review in August 1985, 20 of the 48 recommendations had been adopted in full by ARENTO, 5 had been adopted in part, and 12 had not been adopted. ARENTO officials we interviewed did not know the status of the remaining 11 recommendations. The recommendations not fully adopted, and which concern the ongoing capabilities of ARENTO, included recommendations that affect ARENTO's organization, training, and maintenance functions (See Exhibit 2).

The Project Officer disagreed with the open status of 3 of the evaluation team's recommendations and did not think that 9 others were practical or necessary. Excluding these 12 recommendations would still leave 16 out of the 48 total recommendations that needed to be resolved as of March 1986.

When the consultant's contract expires in fiscal year 1986, ARENTO will lose the skills and services of the remaining 26 consultant specialists who have been advising and assisting ARENTO under Phase II. The particular skills provided by these specialists included fundamental planning, contracts administration, construction supervision, operations and maintenance, fault reporting, transmissions, station installations, financial systems, computer systems, stores and purchases.

Shortly after the specialists leave, the U.S.-funded equipment suppliers, who have been providing warranty operations, maintenance and training in the exchanges and the outside plant facilities, will also complete their contracts and leave. Thus, ARENTO will take over all of the equipment and services provided by U.S. contractors under the project. When that happens, ARENTO's organization, systems, management and work force will more fully experience the demands of the new technology, the new equipment, the improved capacity for information, the increased number of commercial lines and the new services to customers.

We were unable to obtain detailed information on the skills that ARENTO has or will need to manage, operate and maintain the system to full advantage after the consultant contractor and the equipment contractors leave. Neither the consultant contractor nor ARENTO prepared an analysis of the necessary work-force skills or a realistic plan for obtaining and retaining such skills in the organization. An ARENTO official suggested that the organization required an estimated 2500 to 3000 more technically-trained and qualified people to augment its present work staff.

Training is one area important for ARENTO's continued development. Problems in achieving ARENTO's training objectives for needed skills are reported in the next section of this report.

At the time field work was completed in November 1985, some conditions in ARENTO had not changed materially since May 1982. For example, the consultant in Phase I had observed that:

- ARENTO's financial and accounting activities were performed by several independent departments, accounting records were not coordinated, and reports were not prompt or useful for managing the business. Internal audits were not effective and internal controls needed improvement. ARENTO lacked an experienced individual with a solid commercial, financial and accounting background at the appropriate level within the organization to head up the financial affairs of ARENTO.

- Performance objectives were not stated in a way that could be understood by the customers, the employees and the Ministries; and objectives were not well developed for all

aspects of the organization and described in detail for critical areas.

- The exchanges did not have enough trained personnel to form an adequate maintenance staff.

- The major operations problems in the computer center were the lack of skilled operators, a significant underutilization of the computer, a small and inexperienced programming staff, a need for continued on-the-job training for programmers, and a need for coordination with the commercial departments.

- Improved financial awards (or penalties systems) were needed to ensure the availability of a well-trained, stable work force at the national and international toll centers.

- An inter-utility committee to coordinate digging activities was needed to prevent unnecessary disruptions and damages to outside plant.

- Generally acceptable service levels and measurements were needed for dial tone, completion rate, and subscriber trouble reports, so that the level of service would not be allowed to decline gradually, again, over a long period of time.

Many of the consultant's recommendations associated with the above observations were directed to the organizational structure of ARENTO. In order to establish clear lines of authority and responsibility needed to improve information flows and decision-making processes, the consultant presented ARENTO with a Task A-1 report dealing with ARENTO's organizational structure. This report, issued in May 1982, proposed a restructuring to enable ARENTO to meet the changing needs for telephone expansion without a major disruption of the existing organization. A schedule of priority steps was included in the report with expected completion around mid-1983.

The consultant stressed the fact that ARENTO's management personnel - in spite of being competent and dedicated to ARENTO's goals - needed to delegate authority downward in the organization and develop capable managers at the lower levels, based on functional lines with more clearly defined areas of responsibility. The consultant recommended that ARENTO should:

- (1) Consolidate financial functions under a new Vice Chairman whose sole responsibility would be to manage the financial affairs of ARENTO.
- (2) Establish an office of Technical Affairs under a Senior Sector Chief, as part of Operations and Maintenance, to meet new technologies introduced at ARENTO.
- (3) Restructure the Human Resources and Administration activities to consolidate the important support functions under one Vice Chairman to control ARENTO's vast number of employees effectively, and to provide timely administrative services to the rest of the organization.
- (4) Restructure the Engineering and Projects Section in line with new technologies.

The reorganization, along functional lines, did not materialize. ARENTO's organizational structure has not been developed with clear lines of authority and responsibility and with improved internal controls. This happened because ARENTO officials did not think that the entire proposal was necessary or implementable. For example, establishing high positions, such as Vice Chairmen, would involve several governmental approvals and a ministerial decree.

As a result, the primary benefits expected by the consultants from the reorganization of ARENTO have not been realized. The Chairman was not divorced from the details of daily administration and freed to focus on long-range planning, policy setting, approval of operating and capital budgets, and other top managerial functions. The position of Vice Chairman for Finance was not filled, thus leaving ARENTO without the technical and professional leadership anticipated by the consultant to coordinate financial planning and implementation, and without needed oversight to improve internal controls.

The consultants Task A-1 report indicated that adherence to the reorganizational recommendations, with modifications as experience is gained, should improve the effectiveness and efficiency of the ARENTO management team. The new system would allow for more efficient coordination of telephone operations by placing all functions involved in the daily operation of the telephone system under the control of the Vice Chairman for Operations and Maintenance. A Vice

Chairman for Human Resources and Administration, with delegated staff, would permit professionalism in the administration of human resources and eliminate duplication or division of effort in personnel matters. This would be done by establishing a Sector of Human Resources for all personnel planning, policy making, training, and development of methods and procedures.

Failure to adopt many of the reorganization recommendations was due, in part, to the lack of emphasis placed on certain recommendations. Although ARENTO and USAID/Egypt did not generally disagree with the consultant's recommendations, only certain ones were assigned for consultant assistance in Phase II. The consultant did not follow up to see if the remaining recommendations were adopted because its contract did not require it to do so. The USAID/Egypt project files, also, did not show the remaining recommendations were followed-up on after Phase II emphasis was decided.

The current USAID/Egypt Project Officer advised us that not all recommendations were necessary or essential to the success of the project. In several instances, ARENTO officials indicated that some of the recommendations would be adopted, but a time-phased plan was not established. Overall, it was not documented why ARENTO had not adopted many of the consultant's recommendations.

Neither the consultant nor the evaluation team believed that ARENTO would have developed the capability to operate and maintain the telecommunications system to full potential, without outside assistance. For example, the team concluded that many of ARENTO's managerial and operational people were highly capable but lacked organizational motivation and incentives. Moreover, the team concluded that the success of the project was based on an assumption that ARENTO would seriously consider adoption of the advisory consultant's recommendations.

USAID/Egypt also has recognized and discussed with ARENTO the need for further assistance in installing institutional capability. To build on and reinforce the institutional capacity in meeting the growing demand for public and private sector telecommunications service, USAID/Egypt project officials proposed a project paper for a Telecommunications IV project. The \$175-million proposal, in August 1985, addressed ARENTO's needs for better and more detailed information on its present system, employee

assignments and cost alternatives in planning, administrative and financial decisions. It also addressed the need for technical assistance to improve operations-and-maintenance worker efficiency and system performance.

Conclusion

A consultant was hired to advise and assist ARENTO to develop its managerial and operational capabilities. The assumption was that the advice given would be appropriately received and adopted. A plan for implementation of those recommendations needed to derive maximum benefit from the AID investment would ensure that the millions of dollars provided for consulting advice are not wasted.

Serious consideration by ARENTO to continued implementation of the organizational structure recommendations also could reduce the need for outside consulting services. In order for ARENTO to go forward with the recommended reorganization along functional lines, problems in implementing the reorganization need to be aired and solved.

Management Comments

USAID/Egypt said it believed that the recommendations made by the consultant under Phase I had been thoroughly reviewed on several occasions and that USAID/Egypt, ARENTO, and the evaluation team had given each recommendation serious consideration. Also, a detailed analysis was made during the project evaluation review which resulted in the decision to pursue implementation of those recommendations considered relevant to the effective operation of the current project. It said many of the evaluation decisions had already been acted on. For most of the remaining decisions of the evaluation team, action was pending the development of a follow-on telecommunications project. In sum, it suggested that the actions associated with Recommendation No. 1 had already been carried out, and requested that the recommendation be closed.

Office Of Inspector General Comments

The consultant's Phase I recommendations undoubtedly were considered in reaching decisions about which recommendations were appropriate for technical assistance in Phase II. The

records, however, contained little documentation on why certain recommendations were pursued and others were not. The number and content of the "open" Phase I and evaluation team recommendations concern us because of the indicated importance of strengthening the ARENTO organization.

With respect to the recommendations of the evaluation team not yet acted on, consideration of a follow-on project appears to acknowledge the need for improvements in the ARENTO organization as suggested by the consultant. The current project is not, however, due to be completed until late 1988. Thus, unless the projects ran concurrently, action on the open recommendations of the evaluation team would not take place for over two years. Also, there is no certainty that such a project will be approved, and if so, will include the recommendations made previously.

We continue to believe that it would be prudent management on the part of USAID/Egypt to specifically address the open recommendations of both the Phase I consultant contractor and the evaluation team and decide which recommendations have merit as far as strengthening ARENTO is concerned. For those recommendations that have merit, an action plan for implementing them should be developed. The remaining recommendations should be disposed of. We therefore are not closing Recommendation No. 1 at this time.

2. Training Has Not Been Focused

Many of the consultant's recommendations were not fully implemented, as discussed in the first section of this report, and ARENTO did not achieve the internal rate of training set forth in its five-year plan. The consultant contractor assisted ARENTO in establishing the five-year plan in May 1982 to improve employee job performance and prepare for further expansion and modernization. The objective of the plan was to define training needs and to increase the number of employees trained each year until an acceptable rate of training was reached. Several factors caused ARENTO not to achieve planned levels: ARENTO did not establish a data base from which to identify job training requirements, classroom attendance was poor at training facilities, and courses, including a key course on Fiber Optics, failed to start or were discontinued. Also, a sufficient number of Program Developers were not nominated or trained. The consultant was no longer providing the services of the training specialist and USAID/Egypt and ARENTO were not working to fully implement the recommendations. The lack of training can prevent the development of the human resources needed to meet requirements of the expanded telecommunication system.

Recommendation No. 2

We recommend that USAID/Egypt continue working with ARENTO to:

- a. complete and place in operation the computerized data-base system to identify job training requirements;
- b. resolve attendance problems at training facilities; and
- c. complete training courses on Fiber Optics techniques, and nominate and train sufficient Program Developers.

Discussion

ARENTO's training plan covers the five years from 1982 to 1987. The objective of the plan is to increase the average number of ARENTO employees receiving training on any working day, expressed as a percentage of the total number of employees.

The normal rate of training, according to accepted standards for the telecommunications industry in developing countries,

ranges from 3 percent to 12 percent of the total number of employees. Since ARENTO was overstaffed at the start of the program, the low point of the range, 3 percent, appeared to be an acceptable goal over the five-year plan. The plan's primary objective was to increase the rate of training in fiscal year 1982 by a factor of two by fiscal year 1985, and to 3 percent of the total active workforce by fiscal year 1987. If considerable progress was achieved in the early years, then a 4-6 percent rate would not be unreasonable.

ARENTO needed to improve its training program. Project documents indicated that training was required in several areas such as commercial training, operator training, cable training (splicing, maintenance, and pressurization), installation and repair of telephone sets, instructor certification and course design training. Moreover, there was a critical need for remedial training in many occupational categories, as well as for training ARENTO managers at all levels in general management, and in particular for training highly-qualified employees to become Program Developers.

We were advised that more than 2500 additional skilled workers were needed in the ARENTO organization through a program of hiring or retraining employees. However, it did not appear ARENTO could hire that many new employees for many years. Training or retraining programs, therefore, were the most important alternative in developing the skills that ARENTO required.

Project documents, discussions with project officials, and visits to the ARENTO Training Center showed that the rate of training decreased during fiscal year 1983, the first year of the five-year plan. Training Center officials said that the aim was 7.5 percent, but they did not think that training exceeded 2 percent. These officials were unable to provide official records to substantiate a percentage. In 1984, the rate was less than 1 percent according to our calculations, and there was no appreciable increase noted for fiscal year 1985.

ARENTO needed to determine what the shortfall was in key skill categories and how many people needed to be trained. To assist in identifying training needs, ARENTO planned to establish a computerized data base to assess employee capabilities and to select personnel for the training programs. The data base was to furnish management with information on the salary, experience, education, qualifications, and current work assignment of each

employee. The information was needed to develop training and manpower plans and to provide efficient storage, retrieval and analysis of the training records. The training specialist working with the consultant left the project before the system was operating effectively and the system has never fully operated.

ARENTO has been slow in effecting training. For example, training was finally planned to start on February 15, 1986, in fiber optics, a new technology, because ARENTO and the contractor had not agreed on a price after many months. ARENTO employees require extensive training in fiber optics; but, contract negotiations were suspended in January 1985 and not consummated until February 1986. Also, the five-year plan called for training eight new course designers every six months for two years. The Cairo Training Center officials said that a major portion of the training was not started because ARENTO failed to nominate trainees for the courses. Of the 24 Program Developers needed, according to the project consultant, only two positions were filled.

Prior to the end of his tour, the consultant training specialist reported several other problems to ARENTO management and cited many causes for the inefficient training program being carried out. For example: (a) none of the ARENTO counterparts were relieved of their collateral duties and assigned full-time to the training activities; (b) ARENTO did not have instructors with sufficient training to carry on the management training activities initiated by the consultants; (c) ARENTO did not provide the consultant with Egyptian training resources to facilitate training in the native Arabic that would be useful over the long term; and (d) delivery of training equipment was long delayed. ARENTO declined to approve the services of a new consultant training specialist after January 1985 to complete the closing months of the contract.

Attendance problems were primarily due to trainee disincentives. The Cairo Training Center officials claimed that cancelled classes and no-shows of students were due to transportation problems and lack of employee incentives. Also, officials said that the training center was located in a remote area outside Cairo where public transportation is practically impossible. Group transportation was not provided by ARENTO; and therefore, many students did not show up for class. Furthermore, students get paid incentives while on their regular jobs, but do not receive these incentives while training. As a result, students skip

classes on purpose. In some cases, students received a low per diem allowance and refused to attend classes for an extended period. Several other factors contributed to a poor level of attendance or lost training: (a) classes did not start because ARENTO had not provided tools or the contractor had no tools at the school; (b) instructors or students did not show up; (c) translations had not been made; (d) the training center was without sufficient commercial power at times; and (e) some training staff, who did not learn how to use the new equipment, lost the training opportunity.

Contracted training by equipment suppliers in new technologies was also affected by the lack of students' attendance. Delayed or repeated classes resulted in additional costs to the contractor who charged ARENTO on the basis of their continuing failures to provide students with the training schedules. In two cases, the contractor claimed the cost of the delays were \$60 thousand and \$55 thousand, respectively. During the contract training period, ARENTO was responsible for assuring that adequate numbers of employees reported for training to the equipment contractors. After the contractors leave, ARENTO will be responsible for conducting all of this training. An adequate training program is needed to assure a continued supply of skilled technicians to manage, operate and maintain the project equipment.

Additionally, several incidents were reported that adversely affected the continuation of the regular training courses. Cancellation, delays, or postponement of classes; no-shows of trainees; or unavailability of training materials contributed to a decrease in the rate of training and a low level of progress.

The training problem, as far as ARENTO is concerned, was broadly addressed in an evaluation report of June 1984 that stated: "The problem of not aggressively pursuing an active training program to support the needs of ARENTO is deeper in the organization than the Training Sector or Training Center. Before a structured training program will emerge, ARENTO must be willing to recognize the ongoing training need and support a program to fulfill this need."

Future benefits to ARENTO will depend upon the commitment of ARENTO management and, in particular, the training sector management. From 1965 to the start of the Telecommunications I, II and III, the benefits of technical assistance programs to ARENTO's training sector had eroded with the passage of

time, either because of policy changes, loss of key personnel trained through other projects or the progressive atrophy of training capabilities through lack of use. If ARENTO management lacks the proper commitment, a similar loss could occur again.

Conclusion

Inability to properly identify training requirements and poor training results have prevented ARENTO from: (a) developing the human resources needed to meet requirements of an expanded system; (b) implementing the Master Plan and thereby improving the level of service to existing customers; and (c) preparing for future expansions.

Management Comments

Regarding Recommendation No. 2(a), USAID/Egypt stated that the personnel data-base system has been established and that reports are now being issued identifying personnel by functions, position titles, skills and training accomplishments. USAID/Egypt, therefore, requested this part of the recommendation be closed.

Regarding Recommendation No. 2(b), USAID/Egypt stated that ARENTO is unable to resolve attendance problems at its training facilities because it lacks adequate resources to take effective action. It said that ARENTO's lack of technical know how and experience had been recognized and for that reason, large scale training was provided under USAID/Egypt-financed equipment contracts. USAID/Egypt also stated that discussions with ARENTO regarding further development of ARENTO's training capacity would prove more productive and timely if carried out during the design and development of a new telecommunications follow-on project. USAID/Egypt requested this recommendation be deleted.

Regarding Recommendation 2(c), USAID/Egypt stated action has been initiated by ARENTO in the form of a contract amendment with the equipment supplier for fiber optics to provide for the development of training programs, training links and instructors. USAID/Egypt, therefore, requested this part of the recommendation be closed.

Office Of Inspector General Comments

The actions taken on Recommendations Nos. 2(a) and 2(c) are responsive to the recommendations made. We will consider

the action completed when it is clear that the data base is operating effectively and is being used as an integral part of ARENTO's management system. Similarly, we will close the (c) part of the recommendation when the fiber optics training is firmly established and an adequate number of program developers have been trained.

Regarding Recommendation 2(b), we believe that the training provided by the equipment contractors is extremely useful, but alone it is insufficient to ensure a continuing training capability within ARENTO; nor was it designed to do so. Factors that contribute to attendance problems, such as employee transportation costs and disincentives, were recognized in the pre-project sector study in 1978. We believe if additional technical or financial support by USAID/Egypt is needed to complete this aspect of the project, it should be provided. Accordingly, Recommendation No. 2(b) is not being closed at this time.

B. Compliance And Internal Control

Compliance

In the areas reviewed in our audit, there was an adequate level of compliance with applicable laws, AID guidelines, and appropriate agreements except that USAID/Egypt was not taking appropriate steps to ensure that AID guidelines for successfully completing projects were followed. This matter was discussed in Part III, Section A.1 of this report. Nothing came to our attention that would indicate that untested items were not in compliance.

Internal Control

Internal controls in the administration of the project were appropriate and operating in a satisfactory manner according to our limited tests. Nothing came to our attention during the audit that would indicate weaknesses in any areas not tested.

AUDIT OF
TELECOMMUNICATIONS I, II AND III

PART III - EXHIBITS AND APPENDICES

AUDIT OF
TELECOMMUNICATIONS I, II AND III
OPEN RECOMMENDATIONS OF CONSULTANT
(X=NOT IMPLEMENTED, P=PARTLY IMPLEMENTED, U=UNDETERMINED)

Recommendation ***

Status

Organizational Structure (Task A-1)

General

- (a) Overall, we believe that ARENTO should place highest priority on the consolidation of its financial functions under a new Vice Chairman, whose sole responsibility should be to manage the financial affairs of ARENTO. This is important to two reasons: X
- . Public Law 153 assigns to ARENTO new financial responsibilities that were previously performed by the Ministry of Finance.
 - . Financial activities were conducted in different parts of ARENTO without undivided responsibility below the Chairman.
- (b) ARENTO should implement the Office of Technical Affairs with a Senior Sector Chief as part of Operations and Maintenance. This is especially important in view of the new technologies about to be introduced into ARENTO. P *
- (c) Region, Zone and District activities should be reorganized to provide straightline (vertical) supervision of technical functions (e.g., traffic, outside plant, switch) and administrative services (e.g., personnel, purchasing and stores, vehicle maintenance). X *
- (d) Human resources and administrative activities should be restructured to consolidate these important support functions under one Vice Chairman. This will improve ARENTO's ability to control its many personnel effectively and provide timely administrative services to the rest of the organization. U **
- (e) Engineering and Projects should be restructured as soon as adequate numbers of trained engineers can be obtained. This is necessary to implement the greatly expanded plant extension program and to introduce the new technology. X *
- (f) The recommended organization structure, a suggested implementation schedule and management staffing requirements are presented in the previously referenced report of May 1982 should be followed. X

* Fully implemented according to Project Officer, not the Consultant.

** Recommendations repeated for clarity or emphasis under different tasks or sections.

*** Consultant's recommendations have been shortened or paraphrased in some cases for presentation here. Refer to the consultant's task reports for complete version.

W

Finance

- (a) Consolidate all of ARENTO's financial and accounting functions into one organization called Finance. P
- (b) Create the position of Vice Chairman - Finance to direct all financial activities of ARENTO. X**
- (c) Consolidate the functions of cash management, revenue collection, and revenue disbursement into a Treasury Sector under the Vice Chairman - Finance. P
- (d) Consolidate all accounting functions performed in ARENTO into a single Accounting Sector reporting to the Vice Chairman - Finance. This sector will include responsibility for central, branch, and project accounting. It will also develop accounting methods, procedures and systems. P

Administration

- (a) Consolidate the supervision of all plans, policies, methods, practices, and programs relating to personnel, employee affairs, and organizational matters under a Senior Sector Chief for Human Resources. P
- (b) Consolidate the supervision of all plans, policies, methods, practices, and programs for administration services under a Senior Sector Chief for Administration Services. This sector will also provide direct supervision of administrative personnel in the Cairo region. P
- (c) Place the Training organization under the supervision of the Human Resources Senior Sector Chief. X
- (d) Restructure the Training organization along functional lines. U
- (f) Create a sector of Economic Affairs to include Rates and Tariffs and Statistics and Forecasting. P
- (g) Expand the responsibilities of Buildings and Vehicle Maintenance to include direct supervision throughout ARENTO of building maintenance, vehicle maintenance, and safety and security activities. U
- (h) Expand the activities of the Computer Center so that it is responsible for all computerized data processing, user support and management information systems throughout ARENTO. P *
- (i) Move the administration of subscriber contracts to Operations and Maintenance. X *
- (j) Expand Telephone Directory activities to include the selling of directory advertising as well as marketing of directories to the public. P

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Engineering and Projects

- (a) Create two organizations for projects managed by Senior Sector Chiefs: P *
- . Projects Planning, for planning specific projects and integrating the technical engineering into overall plans for each project.
 - . Projects Execution, for managing the implementation of the plan for each project and supervising the project teams.
- (b) Create a Systems Engineering Sector reporting to the Vice Chairman - Engineering and Projects. This sector will be responsible for engineering planning, preparation of the construction program, collection and analysis of usage data, and the integration of technical engineering into engineering plans and programs. X *
- (c) Develop a staff of skilled Project Managers in Projects Execution. Assign a Project Manager to each major project (or group of minor projects) to be responsible for meeting plans and schedules. X *
- (e) Establish procedures that assure the assignment of Operations and Maintenance personnel to project execution teams. These personnel should be sufficient in terms of quantity and type to assure that there will be enough trained people to operate each project when it is turned over to Operations and Maintenance. X *

Operations and Maintenance

- (c) Create a Long Lines Sector consolidating all national (inter-city) transmission and international Operations and Maintenance into one ARENTO-wide organization headed by a Senior Sector Chief reporting to the Vice Chairman - Operations and Maintenance. P
- (e) Create in each region the positions of Senior Manager Administration Services and Senior Manager Operations and Maintenance, both reporting to the Regional Head for Operations and Maintenance. X
- (f) Restructure the Regional, Zone and District Operations and Maintenance organizations to provide vertical or functional (i.e., inside plant, outside plant, commercial, etc.) chain of command from the lowest level of supervision up to the Regional level. Eliminate the supervisory positions of District Manager and Zone General Manager. Add Zone Telephone Representatives in rural areas to represent ARENTO to local governments. X**

(h) Give the responsibility for supervising the Operations and Maintenance of intra-city cable and microwave junctions to the Outside Plant units within the Regions. X

Program and Management Control - (Task A-2)

(1) The goals of ARENTO should be stated in a way that can be understood by the customers, the employees and the Ministries; and objectives must be developed for all aspects of the organization and described in detail for critical areas. X

(2) Among the several data bases urgently needed for planning and program management, the most fundamental is that of plant in service which should contain data on every switch and wire - its location, specification, condition, etc; and be used for designing, planning and scheduling of extensions and replacements, maintenance and inspection, and economic performance and evaluation. Data bases on rates and revenues, traffic and customer service are also essential to planning. P

(3) Within six months, ARENTO should prepare an overall network plan for switching, transmission, outside plant and special services and for matching the performance of the network to the corporate goals. The plan should include alternate routing and emergency restoration criteria. It should be reviewed and updated annually. P

(4) A group of excellent engineers should be assigned responsibility for being knowledgeable about new technological developments. Their activities and findings should be coordinated, especially in the areas of fundamental network planning and equipment procurement. P

(5) ARENTO should establish a system engineering Sector that would be responsible for fundamental network planning, traffic studies and engineering, technical standards, service performance standards and objectives, new technology planning, and environmental and human factors studies. X *

Financial and Accounting (Task A-3)

(1) Appoint a Vice Chairman for Finance with extensive commercial, financial and accounting experience. Few improvements in ARENTO's financial and accounting organization and systems are likely to be achieved unless the individual in charge of the financial and accounting function understands commercial, financial and accounting X**

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practices and the principles of sound financial and accounting organization. The appointment of a Vice Chairman for Finance is our most important recommendation.

- (2) Appoint a Treasurer (Sector Chief - Finance) who should plan for ARENTO's cash and financing needs, administer the cash collections, investments, loans, letters of credit, disbursements, and banking relationships in all sectors and zones, and provide for its cash needs. The treasurer should have had previous commercial, treasury or banking experience. p**
- (3) Consolidate all of the accounting activities in each sector and zone under a Sector Chief - Accounting. X
- (4) Appoint a Sector Chief - Internal Auditing, who should report to the Vice Chairman for Finance, head a modern internal audit function, and be on the same level as the Sector Chief - Accounting. P
- (5) Prepare a long-range financial plan to incorporate service improvements, tariff changes, operating improvements, construction, and internal and external financing. A computer model should be developed to provide financial forecasts that will reflect alternate assumptions pertaining to tariffs, revenues, expenditures and financing. P
- (6) Adopt recommended telecommunications company accounting policies and chart of accounts to produce meaningful financial reports for management. Adoption of this recommendation is essential if ARENTO is to be effectively managed as a telecommunications organization. p *
- (7) Install a general ledger system to facilitate the preparation of timely financial information. p *
- (8) Computerize the primary accounting systems to handle the large volume of data processed and to provide timely financial information by function and area of responsibility. p *
- (9) Expand ARENTO's financial and accounting management development program in Egypt. P
- (10) Reward achievement of ARENTO's financial and accounting personnel to make improvements in systems and practices. X

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Commercial Operations (Task A-4)

- (1) Each changeover should be preceded by a training period of both formal classroom work and hands-on experience in the model office. U
- (2) Appoint someone with authority to enforce the use of standards and procedures. Changes or additions to the system, the methods of doing business, tariff modifications and the services offered to the public must be made known throughout the organization, and especially to the Computer Center, well in advance of their implementation. U
- (3) At the Computer Center, more advanced planning of hardware changes and any associated software changes is needed. X
- (4) ARENTO should engage the services of a full-time consultant to work in the Computer Center to assist with the expansion and improvement of the new system as well as assist in the continued on-the-job training of the programmers. X
- (6) ARENTO should acquire a magnetic tape-to-microfiche processor, many reports, in both the new and old systems, should be microfiched, and the handling of manual toll tickets should be improved was suggested by the Consultant. U
- (7) Old magnetic tapes should be systematically removed from the inventory and replaced and the Computer Center should also purchase a tape cleaner/degausser to improve the recording of data. U

Purchasing and Inventory Control (Task A-5)

- (1) Extend the Task A-5 pilot systems and procedures throughout ARENTO. U
- (2) Establish a budgeting system to control the requisitioning of materials and to eliminate the practice of central, item-by-item, arbitrary rationing of materials. P
- (3) Remove surplus stocks from the regional stores and return them to the main stores, an effective inventory control system at each such regional storeroom and introduce the material replenishment budget control system. All local replenishment requisitions should be honored in full so long as stock is available and budgets have not been exceeded. P
- (4) The computerized catalogue system should be extended to all of the other material classes, be used for stores accounting purposes, be expanded to handle daily transactions, and be expanded to control inventory as well. P *
- (5) Training materials and programs should be developed to assist in subsequent system extension as well as to instruct new personnel. U

Managerial and Technical Training (Task A-7)

- (1) Our primary recommendation is that the Training Sector commit itself to, and obtain top management support for, the Five-Year Plan for the Training Sector or a suitable revision thereof. The plan outlines a program to improve ARENTO's job performance through training. P
- (2) Expand the Training Sector's performance-based course design capability by training 16 new course developers during the next year (eight each semester). P
- (9) Increase the rate of training (the average number of ARENTO employees in training on any given working day) to 3% of the active workforce by fiscal year 1987. P
- (10) Work toward eventual integration of all human resource development activities under one high-level manager, preferably at the level of Vice-Chairman. (This recommendation would integrate the presently dispersed functions of personnel administration, training and manpower planning to support human resource development and would permit the use of a common personnel management information system.) X**
- (11) Train a cadre of professional Human Resource Development managers drawn from the various units concerned with human resources in ARENTO, with special emphasis on occupational and job analysis, manpower planning, personnel policies, selection and recruitment procedures, training and performance assessment. U
- (12) Create a personnel management information system containing accurate, up-to-date information on labor distribution in ARENTO, training needs generated by expansion of technological change in ARENTO's network, and other similar information, as well as a data base of personnel information that can be used for training, manpower planning, compensation planning, personnel assignment and other aspects of human resource development. P

Electronic Data Processing Center (Task A-8)

- (1) ARENTO should aggressively encourage automation (the application of computers to the business) throughout the organization. P
- (2) Information systems should be recognized as a corporate-wide resource. P
- (3) ARENTO's billing operations should be significantly improved. P
- (4) ARENTO should plan to consolidate its computer applications in a new Information Systems Center in approximately three to five years. P
- (5) ARENTO should develop internal data communications services. P

Cairo Exchanges (Task B-2)

- (2) Verify grading in all exchanges. X
- (3) Verify all traffic-measuring equipment and facilities. X

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| (4) Continue frame maintenance program. | X |
| (7) Upgrade battery and charging plant. | P |
| (8) Provide adequate standby power to all exchanges. | P |
| (10) Equip existing exchanges with traffic-measuring equipment as outlined in Phase II and III of IFB 15/81/17. | P |

National and International Toll Centers (Task B-3)

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| (1) The existing methods in November 1980 of operator scheduling and call handling should continue to be used until the network and equipment maintenance was considerably improved, or until the new toll center was cut over. | U |
| (2) Improved financial rewards are needed in both toll centers to ensure the availability of a well-trained, stable work force. | X |
| (3) A change from delay to demand calling, as recommended earlier, should be given priority consideration by the highest levels of ARENTO management. | X |

Cairo Junction Network (Task B-4)

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| (2) The Records Department should be computerized. | U |
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Outside Plant System For Opera Exchange Area (Task B-5)

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| (1) Implement the recommended organization structure for more efficient operations | P |
| (2) Enforce working hours to improve productivity. | P |
| (3) Organize a Public Utility Coordination Committee to prevent unnecessary damage to telephone cables. | X |
| (4) Enforce safety measures to protect personnel and property. | P |
| (5) Improve general housecleaning. | P |
| (13) Remove unused cables from conduits to relieve overcrowding. | X |
| (19) Install additional distribution points to reduce troubles caused by long, exposed overhead cables. | X |
| (20) Insist that work order be issued before jumpers are moved so that cable records will be correct. | X |
| (21) Simplify procedures for issuing materials to eliminate unnecessary delays. | P |

Service to Major Clients (Task B-6)

- (1) ARENTO should continue its effort to fill vacant positions in the Department until there is a full complement. U
- (2) It is strongly advised that ARENTO follow the standardization plans provided for electronic private automatic branch exchanges (EPABX). U
- (3) Continue to use the marketing and administrative practices that were developed for the Department. U
- (4) When a standard product line has been established, use the manufacturer's practices for installation and maintenance. U
- (5) The Department will need the full support of ARENTO's top management to achieve the increased revenues that are possible. U

Subscriber Station Equipment (Task B-7)

- (1) Regular inspection of tools and equipment is to prevent their deterioration to the point that they must be discarded. U
- (2) Management should be aware of the quality of work performed, either by field inspection or through such activities as record posting so that supervisors will be able to spot employees who need training (or retraining). U

Engineering and Operating Practices (Task B-8)

- (1) A priority system should be established so that the Methods Department's efforts will make the greatest impact on the largest group of equipment or people. U
- (2) The standards established for this Department concerning development of a usable, professional product must be followed. U
- (3) The Management Administrative Series should be used to provide standards of operation, action and expectation in all areas and sectors of the organization. U

Goals and Objectives to Measure Quality of Service (Task B-9)

- (1) A system is recommended to indicate when service is below the surveillance level on a continuing basis so that higher management will know that corrective action is needed to augment the normal maintenance effort for dial tone, completion rate, and subscriber trouble reports. X
- (2) Greater use of machine-controlled routine testing is recommended. U
- (3) A simple form should be used to record the details of these tests. U
- (4) Analysis and summaries should indicate the areas where special corrective action may be necessary. U
- (5) Subscribers' Complaints should be collected and collated each day for each exchange. P
- (6) Equipment suitable for centralized observation of live traffic should be installed or be put into operation. X
- (7) ARETO should set up a small group, under the control of the Chairman's Technical Section, to formulate procedures for the review and updating of waiting lists for telephone and telex installations. P *
- (8) As a first step toward the setting of an objective standard for delays in issuing and completing application for service, it is recommended that each exchange area prepare a monthly report for delays between approval and issue of work orders. U
- (9) Prepare daily, weekly, monthly, quarterly and annual management reports. P
- (10) A subgroup should be established in the Technical Section of the Chairman's office to pursue recommendations and to continue the development of service measurements. It is further recommended that this subgroup be led by an engineer with wide and varied experience in the maintenance of telecommunications networks. X

AUDIT OF
TELECOMMUNICATIONS I, II AND III
OPEN RECOMMENDATIONS OF EVALUATION TEAM
(X=NOT IMPLEMENTED, P=PARTLY IMPLEMENTED, U=UNDETERMINED)

<u>Recommendation</u>	<u>Status</u>
<u>Goals and Objectives</u>	
(1) Modify purpose level of log frame: Add goal level assumption; ARENTO will seriously consider implementation of the consultant's recommendations.	P**
(47) Greater emphasis should be placed on annual construction program procedures to enable ARENTO to become self-sufficient in managing the large expansion programs anticipated over the next 15-year period.	U
(48) USAID contributions for ARENTO capital expansion should be reloaned or regranted by GOE to ARENTO as near market terms and conditions as can be negotiated.	U
<u>Introducing Computerized System</u>	
(3) Reform payroll system to pay employees by check.	X**
(4) Computerize personnel files and financial forecasting system.	P
(6) Establish Data Management Sector Chief, plan now where to locate a computer processing center, and add a programming force.	X *
<u>Training</u>	
(11) Put more emphasis on training regarding installation of outside plant.	P
(24) Arrange adequate housing and food for out-of-town students.	P**
(25) Arrange for transportation to and from the training center for all students.	X**
(32) Authorize four additional consultants for the training center.	U
(33) Establish a small cash fund for incidental expenses administered by the consultant team leader.	U**
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* Fully implemented according to the Project Officer by March 1986.	
** Impractical, unnecessary, or no longer applicable according to the Project Officer.	

Installation and Maintenance

- (8) Install Halon fire extinguishing system. X
- (12) FACII should take over the responsibility for installation and maintaining the service wire and the telephone instruments in each ESS exchange area during the maintenance period. X**
- (13) Consider adding water treatment to the air conditioning system. X
- (35) Consider extending the FACII contract to include station installation work. X *
- (36) Use existing project funds to: X
- (a) provide stand-by generators to 12 x-bar exchanges;
 - (b) replace the air-conditioning units at 3 x-bar exchanges;
 - (c) establish switched data network;
 - (d) accelerate station installation.
- (38) Each crossbar exchange of 10,000 lines or more should have a crossbar technician. Standard maintenance procedures should be developed. U**
- (39) Award contract to provide at least 10 outside plant technicians. U**
- (40) A system and adequate funds should be provided to repair test equipment. X
- (41) A utility coordinating committee should be established to stop the damage being done to other utilities plant by the water authority, electro-power authority, sewer authority, and ARENTO. X
- (42) Maintain complete installation and maintenance records; establish work order procedure. U *
- (43) Establish a group of building industry representatives. U
- (45) Reform spare-parts system, transfer to O&M department. U
- (46) Organize a system of plant status reporting. U

Financial

- (16) Keep detailed accounting records of disbursements from all sources. U
- (17) Delete Covenant E: the transfer of LE20 million from debt to equity. X**
- (18) Change accounting covenants to conditions precedent. X

ARENTO's Organizational Structure

- (19) Adhere to ADLI organizational recommendations including more delegation of decision-making. P



CAIRO, EGYPT

UNITED STATES AGENCY for INTERNATIONAL DEVELOPMENT

MEMORANDUM

APR 21 1986

TO: Joseph Ferri, RIG/A/Cairo

FROM: Frank Kimball, Director *FBK*

SUBJECT: The Draft Audit Report on Telecommunications I, II and III Projects; Project Nos. 263-0054, 263-0075, 263-0117

The mission's response to the subject draft audit report prepared by DR/ID office is enclosed.

Auditor's Note:

Attachments 1 and 2 referred to on pages 12 and 13 of the Mission's response were not included as part of the final report. These documents are available for review in the files of the Regional Inspector General for Audit, Cairo.

memorandum

DATE: April 13, 1986

APPENDIX 1

REPLY TO
ATTN OF: Thomas A. Pearce *gdp* OD/ID

Page 2 of 13

SUBJECT: Draft Audit Report: Telecommunications I, II and III
USAID/Egypt Project Nos. 263-0054, 263-0075, 263-0117

TO:

Mr. Terrence J. McMahon, AD/FM

G. Reginald van Raalte, AD/IR *[initials]*I. Summary:

DR/ID appreciates an opportunity to comment on this report. However, the rather extensive use of DR/ID manpower to prepare these comments has not increased the Mission's knowledge of the project and therefore has not in our opinion been a productive use of our time.

DR/ID categorically rejects the fundamental implications of the subject audit report. DR/ID does not agree that the success of the project is currently at serious risk. DR/ID also rejects the implications that we have not been sufficiently involved in the monitoring of this project. The following are DR/ID's detailed comments on the subject report. Section II below provides supplementary project background information and Section III provides DR/ID's comments on specific sections of the audit report.

II. Background:

DR/ID believes that inadequate attention was given to the entire implementation experience gained under the project. The report seems to unfairly focus on only one element of the project (i.e. the technical assistance activities not directly related to the project financed equipment supply activities). As a result, a highly distorted picture is created of the true situation as we see it. Accordingly, a brief background review of the project seems necessary in order that the report reader is not misled.

The project purpose as stated in the project paper is to support and strengthen the ability of the Arab Republic of Egypt National Telecommunications Organization (ARENTO) to more efficiently manage and operate the Egyptian telecommunications system in order to improve service to customers. As described in the project papers, this purpose was to be achieved by:

- 2 -

- Replacing seven old and obsolete rotary exchanges in Cairo and Alexandria with Electronic Switching Systems (ESS).
- Providing the related outside plant facilities for these new electronic exchanges and the junction cable inter-connections between the telephone exchanges within the Cairo and Alexandria networks.
- Providing the necessary U.S. technical assistance to support institutional improvements and also to design, procure and supervise the installation of the above mentioned equipment.
- Procuring other telecommunications and related equipment such as air conditioners, and other miscellaneous equipment.

DR/ID believes that these project components are being successfully completed. The following describes the implementation status of each of the four project components stated above:

A. Replacement of Rotary Equipment:

On February 1982, ARENIO and American Telephone and Telegraph International, Inc. (ATTI) executed a contract which required ATTI to engineer, furnish, install and maintain for an initial period, eight electronic switching systems (ESS) to replace the seven old rotary switches.* In addition, ATTI was required to provide to ARENIO engineers and technicians extensive training in the U.S., in-country and on-the-job in the operation and maintenance of the switching equipment. All eight ESSs have been installed in Cairo and Alexandria and are in operation. In addition, all of the rotary switches have been taken out of service. The U.S. and in-country formal training has been completed and ATTI maintenance crews are still continuing to provide on-the-job training to ARENIO engineers. Thus, the first project component is being completed.

B. Outside Plant and Junction Systems

On June 27, 1982, ARENIO and Ford Aerospace and Communications International Inc. (FACII) executed a contract which required FACII to engineer, furnish, install and maintain telephone outside plant facilities for the new ESS exchanges and the junction exchange inter-connections for the Cairo and Alexandria networks. FACII was also required to provide U.S., in-country and on-the-job training in the design, engineering, installation and operation and maintenance

* The Maadi exchange outside plant system was designed and built by ARENIO to accept two switching systems, one in the Maadi central office and one in the New Maadi central office.

of both the outside plant and junction systems. All of the civil works associated with the new ESS exchange areas and the junction networks are complete. ARENTO and FACII have completed all the acceptance tests for the outside plant. The fiber optic junction system is installed and almost all links have been tested and accepted by ARENTO. All of the training activities for the outside plant systems have been completed. In response to persistent USAID urging, ARENTO and FACII recently executed contract amendments to provide maintenance, test equipment, spare parts, training and documentation for the fiber optics junction system. In sum, the second project component, the provision of the outside plant facilities and the inter-exchange junction cables, will soon be completed.

Thus with the completion of the first two components stated above, the original end of project status conditions related to the overall improvement of telephone service have also been met. The new switching systems are providing improved service to approximately 130,000 subscribers. More than 7.1 million direct beneficiaries are receiving improved telephone services, in addition to the indirect beneficiaries such as national and international callers. There has been a reduction of dial attempts/contact ratio, a decrease of the number of private systems operating and greater use of telephones.

C. Technical Assistance:

On March 2, 1980, ARENTO and Arthur D. Little International (ADLI) executed a contract for managerial and technical services. Under the contract, ADLI the prime contractor and its subcontractor -- Continental Page International (CPCI) are required to provide services for institutional and technical strengthening activities in the areas of fundamental planning, finance and administration, organizational structure, tariff rates, computer systems and applications, technical and on-the-job training, project design, engineering, procurement, construction/installation supervision of the construction contracts, and operations and maintenance.

ADLI/CPCI have completed the preparation of specifications, and assisted ARENTO with the evaluation, award and negotiation of the following contracts:

1. Electronic Switching Systems. (ATTI)
 2. Outside Plant and Junction Systems. (FACII)
 3. Air-Conditioning Spare Parts for telephone exchanges in Cairo.
 4. Air-Conditioning Replacement Units for all of the Cairo crossbar exchanges.
 5. Traffic Measuring System (TMS) for the Cairo Opera exchange.
 6. Two Mini-computer Systems for the Project Planning and Management office and for Stores and Purchases.
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ADLI/CPCI are still supervising the installation and testing activities for many of the above contracts in addition to the CIP-financed contract which ARENIO has with Raytheon for furnishing and installing microwave junction systems in Cairo and Alexandria.

In the Operations and Maintenance (O&M) areas, CPCI has assisted ARENIO in the rehabilitation of various Cairo crossbar exchanges, the outside plant network in the Opera exchange, and several portions of the existing junction system. The O&M consultants have established a centralized records bureau for the junction network, a trouble reporting system for the Opera exchange and a computerized fault reporting system. In addition to the above, the O&M consultants have provided assistance and on-the-job training to ARENIO during the cutovers of the Cairo and Alexandria ESS exchanges, these activities included subscriber installation, cable and record assignments, and jumpering at the main distribution frames in the exchange buildings.

In the area of institutional strengthening, ADLI has developed recommended changes to ARENIO's organizational structure, many of which have been implemented by ARENIO and have been beneficial to the successful completion of the project. Indeed, over the past few years following the promulgation of Law No. 153 in 1980 creating ARENIO as a semi-autonomous entity, there has been a significant change within ARENIO's operating style. The chairman and senior management of ARENIO are delegating more, they are better utilizing their staff to provide them with information and data. These changes that have occurred throughout ARENIO are continuing. Some examples of these organizational changes are: the establishment of the office of technical affairs with a senior sector chief (Eng. Khalifa Mabrouk) reporting directly to the Chairman of ARENIO; the reorganization of region, zone and district activities in order to provide straight line supervision of technical functions, and the restructuring of the engineering and projects divisions to accommodate the engineers and technicians who have completed training under the project financed equipment supply contracts.

In addition, ARENIO has also established a computerized Project and Program Management Office (PPMO) and now has staff trained in the use of modern tools and techniques. With consultant assistance ARENIO has improved its finance and accounting systems by developing and implementing a project accounting system, a chart of accounts, a general ledger system and the establishment and implementation of a computerized payroll system. ARENIO also established its first modern commercial office at the Dokki exchange to serve as a model for the other exchanges within the Cairo and Alexandria urban network. A computerized purchasing and inventory control system has been established for ARENIO's purchases and stores department. With consultant support an up-to-date modern classroom has been

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established at the ARENTO training institute at Nasr City, and new training courses have been developed and many courses have been given to ARENTO's middle management and training instructors on the management of a modern telecommunications organization. Following the study and recommendations prepared by the consultant, a new rate structure for services was recently put into effect which will significantly strengthen ARENTO's financial viability. The yearly rate was increased, in July 1985 by an average of 60 percent and ARENTO has in the past few weeks again increased the telephone installation rates by approximately 50 percent and the telephone extra call charging by 2 P.T. (from P.T. 3.00 to 5.00).

In conclusion, the third component of the project, the provision of necessary technical assistance, has been largely completed (except for additional supplier provided on-the-job training, which is still ongoing), and ARENTO has made significant progress in strengthening its institutional capability. In particular it has installed and is now operating the very complex state-of-the-art telecommunications systems supplied under the project. DR/ID therefore considers that additional institutional strengthening assistance is not essential to the project, at this time. Furthermore, ARENTO is in the process of assessing its capabilities and identifying areas where additional assistance may be required (using expatriate or local expertise). This is in line with current GOE efforts to improve institutional capacity using reduced levels of foreign talent. Therefore, it would be ineffective and counterproductive to our relationship with ARENTO to initiate now, a number of the actions recommended by the auditors.

D. Other Telecommunications Equipment:

In addition to the equipment provided under the MITI and FACII contracts, the project also financed two other significant equipment activities. One is a contract with Sam P. Wallace Company for the replacement of air-conditioning systems in all of the existing crossbar Cairo telephone exchanges. The majority of the work under this contract is complete and the contractor should be demobilized by mid-1986. The other is a contract with the Conrac Corporation for the provision of traffic measuring systems for the Opera telephone and telex exchange in Cairo and U.S. and in-country training to ARENTO engineers in the operation and maintenance of the traffic measuring systems. All work under this contract has been completed and ARENTO engineers are currently operating and maintaining the system. DR/ID therefore believes that this fourth project component has also been satisfactorily completed.

In sum, DR/ID believes that the objectives of the project are being met and the project has been very successful to date. We believe that the AID-financed project has been an effective and integral part of ARENTO's overall expansion program. We of course recognize that ARENTO is a growing utility and will need to continue to expand its facilities, its institutional capabilities and its training programs, as does any other large utility in Egypt or in the U.S. Any future AID assistance to the telecommunications sector (particularly technical assistance) will naturally take into consideration ARENTO's needs and desires for further institutional and administrative development, technical training and expansion of physical plant. At the same time, reports from the project-financed contractors and from USAID officers, indicate that there has been a significant improvement in ARENTO's institutional capability, which is continuing daily and that ARENTO more fully appreciates the need for further improvement. In sum, the project inputs (particularly the technical assistance inputs) appear to have been effectively utilized. Therefore, the claim in the audit report that the investments made under the project may be at serious risk are not justified.

III. Report Content:

A. Executive Summary:

1. The statement in the last paragraph of page i suggesting that ARENTO is not developing the capability to operate and maintain the system to full potential, is a conclusion which is not supported by our field observations. As mentioned previously ARENTO has already started to operate and maintain the new systems. The Maadi telephone exchange is currently being operated and maintained solely by ARENTO (The U.S. contractor maintenance contract for the Maadi exchange expired in January 86). Reports by the U.S. contractors and recent field trips indicate that the ARENTO engineers are quite capable of handling the new systems and are properly handling the operation and maintenance of the Maadi exchange. Further, ARENTO appears to be making significant progress to fully utilize the potential of the systems provided. ARENTO is already using the information contained in the ESS computer printouts to locate system trouble spots and initiate appropriate maintenance actions. ARENTO has also advertised the additional subscriber features which are inherent in the ESS equipment (e.g. three-way conference calls, malicious call tracing, abbreviated dialing, wake-up service, ect). Since the U.S. supplier maintenance personnel will be in-country until the end of 1987, ARENTO personnel will gain further on-the-job training and gain more hands-on experience which will further strengthen their existing capability to utilize the project financed equipment. Therefore, we recommend

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that the statement in the last paragraph on page i of the report be deleted. Similarly we believe that the statement on page ii, "This lack of training has prevented the attainment of development objectives", is also a conclusion that is not supported by conditions in the field and should be deleted.

2. The statement on page ii that 64 percent of the recommendations made by the US consultant have not been fully implemented appears to imply that the project funds were not effectively utilized and benefits expected were not achieved. Indeed DR/ID believes the reverse is true. AID project assistance has been effectively utilized and has strongly supported our primary development objectives for assistance to Egypt. As mentioned above ARENIO's management capability has improved tremendously over the last few years and eventhough not all of the consultant's recommendations have been fully accepted and implemented, both ARENIO and DR/ID agree that the recommendations which were most critical to the achievement of the project objectives have been successfully implemented.
3. If Recommendation No. 2 is not closed, as requested herein, the word "see" in the last sentence on page ii (i.e. "We recommend that USAID/Egypt see that") should be replaced with the word "advise", to be consistent with Page 20 and Page 1 of 2 of Appendix 1 of the audit report. DR/ID believes that it is entirely impractical to think that USAID can take over administrative responsibilities of ARENIO to the point of "seeing" that ARENIO's personnel attend class.

B. Results of the Audit:

1. In the second paragraph on page 4 the auditors make the statement, "we did not, however, evaluate the efficacy of the recommendations made by the consultant". In our view, such an evaluation would require considerable input from individuals with years of experience in telecommunications utilities and an indepth knowledge of ARENIO as an organization. At the same time, in numerous other sections of the report, (e.g. page 6 last paragraph, page 11 last paragraph, page 14, page 16 and page 17) observations were made that appeared to indicate that since not all of the recommendations made by the consultants were fully implemented, ARENIO will not have the capability to operate the new systems and a \$242 million investment will be wasted. To reach such conclusions the auditors as acknowledged in the audit report, seem to have relied very heavily on comments from the project-financed consultants (indeed, as stated by DR/ID in the exit conference, the consultants were observed with a copy of the draft audit report, which we were
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instructed on the cover sheet to "safe guard" and not "circulate outside of the Mission".). One must remember that all contractors make recommendations to their clients which are, at times, influenced by a desire to obtain additional business. It is no secret that the project financed consultants have been actively seeking more AID-financed work in Egypt (Indeed DR/ID recently received an unsolicited proposal from CPCI and many representations have been made to Mission management concerning additional work.) To date DR/ID has not found any evidence to support conclusions such as those contained in the audit report and referred to above. Our findings are based on a balanced assessment of the information received from field observations and from all U.S. contractors and AREMIO officials at various levels. Accordingly, DR/ID suggests that the conclusions referred to above should be deleted from the report.

2. DR/ID takes exception to the statements in the report (such as those found on page 5 and page 7) which imply that DR/ID has not been doing an adequate job of monitoring this geographically widespread and technically complex project. The record clearly shows that DR/ID has been and still is making regular site visits and is frequently meeting with AREMIO and contract representatives to discuss and help identify and resolve implementation issues and facilitate the timely and successful completion of the project. DR/ID takes its responsibilities seriously and we are quite proud of the success achieved to date by this project. We therefore find particularly rewarding recent statements made by high ranking COE officials (such as the Prime Minister) and in the local press which demonstrate a significant awareness and gratitude for the improved telecommunications service which has taken place over the past few months.

C. Findings and Recommendations:

1. Recommendation No. 1 (page 8):

DR/ID believes that the actions associated with Recommendation No. 1 have already been carried out by USAID and therefore suggest that if the Recommendation is not deleted it should be closed upon issuance of the final report.

Discussion:

The Audit Report seems to imply on page 8 that with the planned departure of the U.S. consultants the implementation of the project might cease and therefore H.E. 3 close out procedures should be initiated. This is clearly not the case. First of all the PACD is

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December 31, 1988 and over \$48 million remain undisbursed under the project. Second, the large majority of the U.S. consultants who will be leaving during 1986 (20 out of 26) were those technical experts who were needed to assist ARENTO in the supervision and management of the two project financed U.S. supplier contracts. These consultants have not been carrying out essential longer-term ARENTO management functions. Their departure should cause no gap in ARENTO's ability to effectively operate and maintain the project financed equipment. At the same time, ARENTO and USAID are discussing and reviewing the need to extend the services of equipment supplier personnel in order to continue to assist ARENTO with the operation and maintenance of the project financed equipment.

The Auditor's statements on page 7 concerning the extent of the implementation of the U.S. consultant's recommendations is more properly seen from the opposite or more positive side. In other words, almost one-half of the U.S. consultants recommendations have been acted on by ARENTO. It is unfair and irrational to judge the success of this or any other project by an arbitrary percentage of the consultant's recommendations which have not been implemented. Our experience indicates that implementation of institutional reforms in developing countries is a slow and painful process. Completion of the entire reform process is not usually achievable during the life of any single project.

Further, DR/ID believes that the recommendations made by the consultant, necessary for the successful implementation of the project financed equipment, have been successfully implemented by ARENTO. The other recommendations have not been ignored by ARENTO. Some have not been fully implemented yet (although ARENTO has been working towards completion) and the implementation of others have been determined by ARENTO to be impractical, often because ARENTO currently has insufficient funds. In any event, we definitely do not believe that the costs incurred in making the consultant recommendations were a waste of AID funds.

It was clear during our discussions with ARENTO that not all of the consultant's recommendations could be considered equally vital to the success of the project or to ARENTO's institutional development (as is suggested in the audit report). Accordingly, USAID did initiate a dialog with ARENTO to identify and implement those key institutional strengthening actions needed to achieve the project purpose and to ensure the effective operation and maintenance of the project financed electronic switching system equipment and outside plant.

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One part of this effort involved a detailed review of the recommendations made by the ADLI consultant team during the Phase I contract period. As a part of the negotiations for a Phase II contract amendment with ADLI each Phase I recommendation was carefully analyzed and reviewed in terms of its feasibility within the Egyptian environment, its effectiveness for the strengthening of ARENTO's institutional capabilities in general and for ensuring that the purpose of the AID financed project in particular was achieved. Following these review and discussion sessions the ADLI Phase II contract was finalized. This phase II contract included expatriate technical assistance to assist ARENTO in the implementation of what were determined to be the most important Phase I recommendations. Areas of assistance included fundamental planning, computer systems and applications, finance and administration, operations and maintenance, training, billing operations and project design, engineering, procurement and execution. Most of these Phase II tasks are now complete and a significant portion of the new systems are operating.

The U.S. Consultant's recommendations were again reviewed as a part of the Mission's project evaluation exercise. In planning the evaluation, a scope of work was prepared by ARENTO and USAID which would require the contractor to: review and analyze ADLI's Phase I recommendations; identify the need for additional assistance to ARENTO; and discuss possible AID follow-on project activities. In May 1984 a contract was executed between USAID and Teleconsult, Inc. to carry out the scope of work. The evaluation team made 54 recommendations. This set of 54 recommendations to a large degree, represented a consolidated and updated presentation of the ADLI Phase I recommendations. In February, 1984 USAID and ARENTO jointly agreed to group the 54 recommendations into the following two categories:

- Actions not yet implemented which are critical to the success of the ongoing USAID-financed projects and will require additional funds.
- Actions not yet implemented which are longer-term in nature and could be considered as a part of a new Telecommunications Project.

The first category of recommendations have all been implemented except for one recommendation that ARENTO is still considering (the addition of water treatment equipment to the air conditioning system). In recent discussions between ARENTO and USAID it was decided that the water treatment equipment was not critical to the success of the project. In view of the limited available resources, ARENTO and USAID agreed that this action should probably not be considered essential to the operation of the project-financed systems and therefore should not be given a high funding priority.

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In conclusion, we believe that the recommendations made by the ADLI Consultant under Phase I of their contract have been thoroughly reviewed on several occasions and during these reviews ARENIO has given each recommendation serious consideration. Indeed, during the most recent review, which was completed as a part of the Project Evaluation, a systematic analysis of the Phase I recommendations was carried out by a non-project financed contractor and a formal review of this analysis was completed by high level ARENIO and USAID officials. USAID and ARENIO's agreement on how to approach the implementation of each recommendation was formally recorded in the Project Evaluation Summary (PES) document submitted to AID/W on February 19, 1985 (Attachment 1). Many of the evaluation decisions have already been acted on. For most of the remaining decisions, initiation of action is pending the development of a follow-on Telecommunications project. In sum, it is suggested that USAID/Cairo has already carried out the actions associated with Recommendation No. 1.

2. Recommendation No. 2 (Page 20):

DR/ID believes that the actions associated with Recommendations Nos. 2(a) and 2(c) have already been carried out and therefore request that these recommendations be closed upon issuance of the Audit Report in final. DR/ID believes that Recommendation No. 2(b) is impossible to implement meaningfully and should be deleted from the Audit Report.

Discussion:

The audit report appears to incorrectly imply that the project was designed to tackle all of ARENIO's institutional problems nationwide. We believe that this was not the original purpose of the project. In designing the project, USAID recognized early on that ARENIO lacked the technical know-how and experience to provide the training necessary to fully support the sophisticated state-of-the-art equipment and systems being supplied under the project. It was therefore decided that to ensure the successful operation and maintenance of the AID financed equipment, large scale training programs would have to be included under the same project-financed U.S. supplier contracts.

DR/ID believes that these contractor supplied training programs have been generally quite effective. This judgement is based primarily on reports of training activities and evaluations of ARENIO's staff that have been prepared by the U.S. contractors and not on any arbitrary percentage of staff trained annually. Over 300 ARENIO engineers and technicians have received U.S., in-country and on-the-job training under the project. In addition, ARENIO engineers are currently

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operating and maintaining the new electronic telephone systems and the U.S. Contractors reports for the last three months (Attachment 2) contain statements about the excellent technical capability of the ARENTO O&M engineers. It is expected that this experience and continued effort by the contractors during the maintenance period will further improve ARENTO's technical capability to operate the system. Also, as outlined in the contractors reports, ARENTO is currently utilizing most of the equipment's functions and capability and with increased demand for service and more experience the equipment is expected to be more efficiently and fully utilized .

In an effort to accurately identify ARENTO's longer-term skill needs, a personnel data base system has already been established by the U.S. training consultant prior to his departure and ARENTO is currently computerizing this system. USAID has recently approved the procurement of a mini-computer system for the payroll and personnel systems. In the meantime, ARENTO is using its existing computers for the personnel data base system and has forwarded to USAID printouts identifying personnel function, position titles, skills and training accomplishments. Accordingly DR/ID believes that ARENTO has already established an effective personnel data base system and requests that Recommendation No. 2(a) be closed upon the issuance of the subject report in final if it is contained therein.

While USAID can advise ARENTO to resolve attendance problems at its training facilities, it is doubtful that such an action would be meaningful or effective at this time. Indeed, ARENTO is already well aware of its training attendance problems but lacks adequate resources to effectively resolve them. DR/ID suggests that our discussions with ARENTO regarding further development of ARENTO's training capacity would prove more productive and timely if carried out during the design and development of a new telecommunications follow-on project. It is therefore suggested that Recommendation No. 2(b) be deleted.

Regarding Audit Recommendation No. 2(c), a detailed Fiber Optic training program for the ARENTO staff has been initiated by the U.S. contractor after the recent execution of the associated contract amendment. Under this amendment FACII will develop programs and will supply and install Fiber Optics training links at the Nasr City center and train instructors. Accordingly, Recommendation No. 2(c) should be considered closed upon issuance of the report in final if it is contained in the final report.

List Of Recommendations

	<u>Page</u>
<u>Recommendation No. 1</u>	5

We recommend that USAID/Egypt:

- a. determine which of the open recommendations made by the consultant (Exhibit 1) and the evaluation team (Exhibit 2) should be implemented to protect the investment already made;
- b. work with ARENTO to implement those recommendations; and
- c. ensure that a time-phased plan and follow-up system are established to implement the recommendations.

<u>Recommendation No. 2</u>	14
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We recommend that USAID/Egypt continue working with ARENTO to:

- a. complete and place in operation the computerized data-base system to identify job training requirements;
- b. resolve attendance problems at training facilities; and
- c. complete training courses on Fiber Optics techniques, and nominate and train sufficient Program Developers.

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