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**Audit of Environmental
Activities under USAID/Egypt's
Industrial Production Project No. 263-0101**

**Audit Report No. 6-263-90-09
September 12, 1990**

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

September 12, 1990

MEMORANDUM FOR D/USAID/Egypt, Marshall D. Brown

FROM : RIG/A/C, F. A. Kalhammer 
SUBJECT: Audit of Environmental Activities under USAID/Egypt's
Industrial Production Project No. 263-0101

We provided you with a draft of this report for your comments which we have reviewed and included, as appropriate, in this report. Ten copies of the report are being made available to you and your staff.

The report has four recommendations of which one (No. 2) is closed; the remainder are considered "resolved."

Please respond to this report within 30 days, indicating any actions planned or taken to close the recommendations.

I would like to take special note of the substantial efforts which have been made by your staff in addressing the serious problems which had long hindered implementation of this activity, and in providing a detailed response to the draft report. I also appreciate the cooperation and courtesies extended to my staff during the audit.

EXECUTIVE SUMMARY

The Environmental Activities Subproject of USAID/Egypt's Industrial Production Project was designed to provide pollution control assistance to public sector industries. The grant agreement of August 31, 1978 (as amended) included \$28.5 million for the acquisition and construction of pollution abatement systems and related technical assistance. A.I.D.-financed assistance was originally authorized to last five years, or until September 1983. Implementation delays, however, led to five project extensions. The latest extension to June 1992 was approved in November 1989. As of September 30, 1989, \$18.8 million of the \$28.5 million had been committed for specific project tasks but only \$14.7 million had been disbursed.

Between November 1, 1989 and March 31, 1990 we audited the subproject in accordance with generally accepted government auditing standards and found the following:

- During the first six years of project activities the assistance was directed primarily at studying and defining the environmental pollution caused by Egyptian public sector industries. Fifteen in-depth feasibility studies for pollution control activities were completed. Pollution control tasks selected for A.I.D. financing were originally to be completed by October 1987. The completion of these activities, however, has been seriously delayed.
- Late in the project (1990), USAID/Egypt initiated two additional pollution control tasks which, in our opinion, would probably not have been completed before the latest authorized project completion date of June 30, 1992 for a variety of reasons. USAID/Egypt was asked to reassess the feasibility of the new tasks, assess the GOE implementing agency's contracting capabilities, and take measures to ensure the sustainability of the acquired environmental control systems.
- Although the Industrial Production Project started in 1978, the Mission had, according to Government of Egypt officials, never requested an accounting for host country contributions under this project. Consequently, the Mission had no assurance that the \$9.2 million contributions promised by the Government of Egypt had been made as agreed.

USAID/Egypt has taken several significant corrective actions which address concerns raised in this report.

USAID/Egypt's Summary Response to the Audit

The \$28.5 million Environmental Activities Subproject (EAS) is one of several components of the \$130 million Industrial Production Project (IPP). IPP was conceived and designed in the late 1970's at a time when USAID's program in Egypt was relatively new and growing rapidly. Typical of the large, multi-component projects which were initiated by USAID during those years, IPP was to be the centerpiece of USAID's assistance program for Egyptian public sector industry. At that time, the Mission did not know how difficult and time-consuming it could be to introduce change in public sector industry. As a result, the originally estimated five year life of project proved to be highly unrealistic. Once the project was approved, an industrial pollution survey had to be carried out, target companies selected, and specific sub-activities designed for subsequent pollution control investments. This alone took seven years. In retrospect, a reasonable planning period for a project of this nature would have been 10-12 years. In terms of timely and effective implementation, the EAS has been a problem project for the Mission for a number of years, despite our best efforts to conform an array of thorny problems.

In any case, over the past year USAID has performed an extensive analysis as to how to best see the project through to completion. The auditors have independently confirmed and endorsed management's planned approach, which is essentially to focus project resources only on the completion of activities which are already ongoing, i.e., no "new starts".

However, the audit report also states at one point that: "...after more than 11 years of project activities and the expenditure of \$14.7 million and LE7.9 million, there had been little if any reduction in public sector industrial pollution in Egypt." We believe that this statement is not consistent with the tangible achievements of the EAS. Notwithstanding the implementation problems, we believe that this project has achieved its stated purpose of improving the environmental effects of selected industrial plants in that it has resulted in the annual control of hundreds of thousands of tons of various pollutants, as well as increased awareness of the importance of industrial pollution control within public sector industry overall.

The audit was performed at a time when considerable management effort already had begun to turn the tide toward completion of most of the pollution control tasks. The audit report therefore presents an out-of-date "snapshot" of the EAS which does not accurately depict the quantitative abatement of industrial pollution which has been achieved. Our response to audit recommendation No. 1 provides a detailed description of project achievements. (Included as Appendix 1 to this report)

RIG/A/C's Evaluation of the Mission's Response

The audit resulted in several significant corrective actions.

The Industrial Production Project has now been transferred to the Mission's Engineering Division where it is receiving increased technical oversight. There appears to be more management emphasis on providing for the sustainability of the installed pollution abatement systems.

The Mission has reassessed the feasibility of the initiatives at MISR Chemical Company and SEMADCO authorized in late 1989 and concluded that these could not be completed within the project's latest approved project assistance completion date of June 30, 1992. These tasks, valued at \$4.3 million, will therefore be deleted from the project.

The Mission has also taken action to establish a reporting system for the \$76.7 million of contributions promised by the GOE for the Industrial Production Project overall. To date, these contributions have not been reported to USAID/Egypt.

Office of the Inspector General

**Audit of Environmental
Activities under USAID/Egypt's
Industrial Production Project No. 263-0101**

TABLE OF CONTENTS

	<u>Page</u>
PART I - INTRODUCTION	1
A. Background	1
B. Audit Objectives	3
PART II - RESULTS of AUDIT	5
A. Findings and Recommendations	5
1. Were Pollution Control Activities Being Timely Implemented?	5
2. Was USAID/Egypt's Monitoring of Host Country Contributions Adequate?	15
B. Compliance and Internal Controls	17
C. Other Pertinent Matters	18
PART III - APPENDICES	
1. Management Comments	
2. Status of Environmental Activities	
3. Host Country Contributions	
4. Report Distribution	

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PART I - INTRODUCTION

A. Background

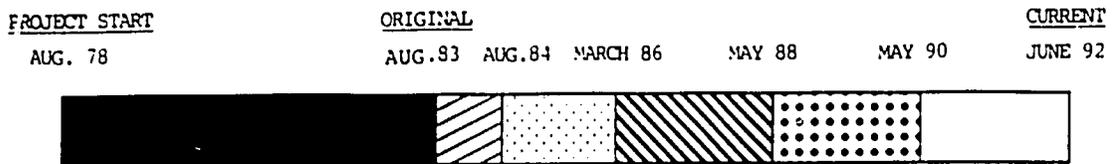
The Industrial Production Project (IPP) was intended to assist the Government of Egypt's (GOE) Ministry of Industry to plan, design, and implement a number of industrial and pollution control subprojects. These subprojects are primarily directed at rehabilitation, modernization, and expansion of public sector industrial companies in Egypt. The IPP grant agreement of August 31, 1978 (as amended) authorizes a grant of \$83.6 million and a loan of \$46.4 million; the GOE agreed to contribute \$76.7 million in equivalent Egyptian currency. A portion of these funds was provided for industrial pollution control, training and management assistance for Ministry personnel and public sector plant managers. The GOE implementing agency within the Ministry of Industry is the General Organization for Industrialization (GOFI).

Environmental pollution in Egypt is severe, particularly in Cairo, Alexandria and nearby industrial areas. Untreated industrial wastes are discharged directly into the sewerage systems along the Nile and into the Mediterranean from about 350 plants. Air pollution is caused by rapidly increasing numbers of motor vehicles and factories that discharge carbon dioxide and monoxide, lead and sulphur dioxide virtually untreated and unabated into the environment. The density of suspended particles is very high particularly around the Helwan cement factories south of Cairo. Mixed with gases and particles, the excessive volume of dust specific to Cairo has been estimated at 100 tons per square mile.

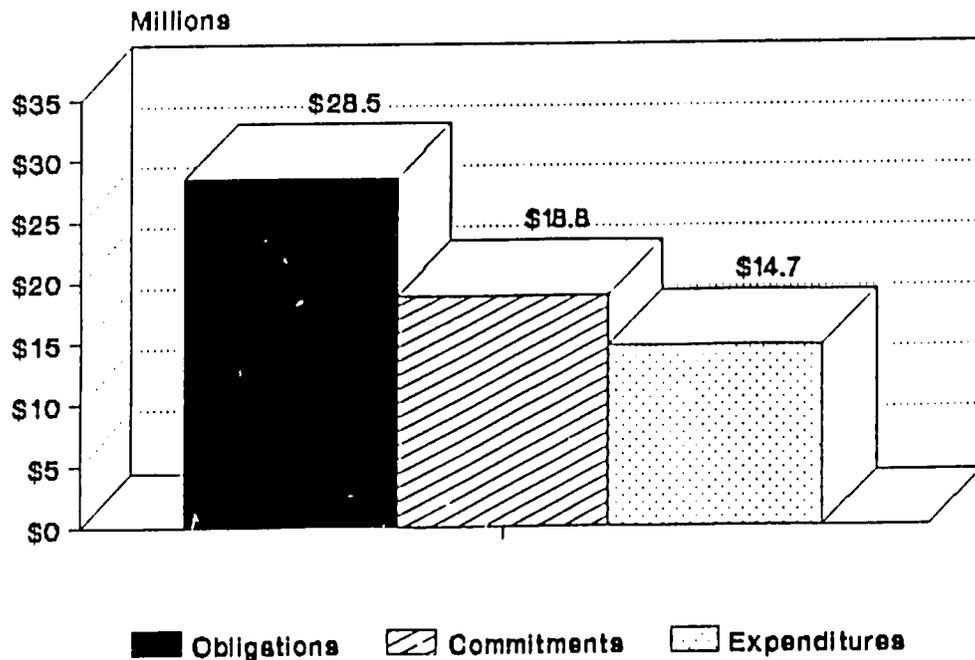
IPP's "environmental activities" were designed to provide industrial pollution control assistance. For this purpose, USAID/Egypt had obligated about \$28.5 million for technical assistance (\$6.5 million) and the purchase and installation of pollution abatement systems (\$22 million). The GOE's contribution to this subproject was planned at \$9.2 million in local currency equivalents. There were three major host country procurements under this subproject for technical assistance and the implementation of pollution abatement tasks. Firm-fixed-price turnkey contracts for the design and construction of 16 pollution abatement systems were entered into between the prime contractor, Merscot-ECG (an American-Egyptian joint venture) and six public sector companies in different industries.

The project's originally planned completion date was September 30, 1983, but has now been extended five times. The latest authorized project assistance completion date (PACD), June 30, 1992, extended the project to a total of 14 years.

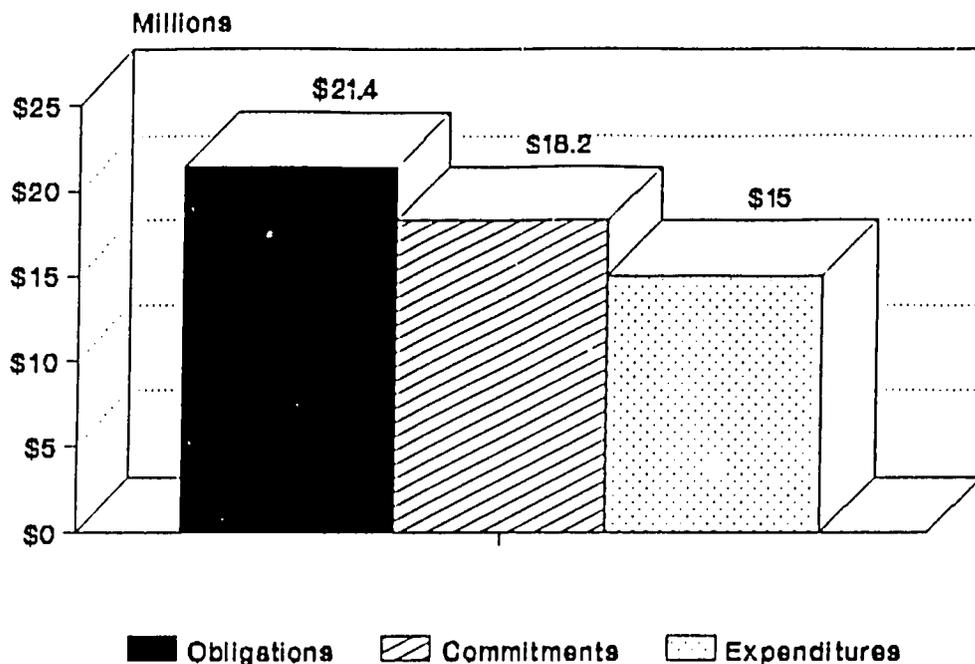
IPP GRANT PACD'S



As of September 30, 1989 the Environmental Activities subproject's (263-0101.10) financial status was:



On June 30, 1990 the status of funds for environmental activities had changed because in February, 1990 about \$7 million was redirected to other IPP subprojects:



B. Audit Objectives

The Office of the Regional Inspector General for Audit, Cairo made a performance audit of USAID/Egypt's Environmental Activities subproject of the IPP. The audit objectives were to: determine if USAID/Egypt had ensured that industrial pollution control activities were being timely implemented and whether GOE contributions were being effectively monitored by USAID/Egypt to ensure that they were being made as agreed.

To accomplish the audit objectives we interviewed cognizant USAID, contractor and GOE officials, reviewed the project paper, grant agreement and amendments, implementation letters, implementation plans, contracts, financial reports, and other pertinent project documentation. Our audit included visits to the five public sector companies that had implemented various pollution control tasks and to the GOE laboratory that was being established for monitoring environmental pollution.

The audit was made during the period November 1, 1989 through March 31, 1990. It covered the period from project inception in 1978 through February 22, 1990 and included disbursements of about \$14.7 million as well as GOE expenditures of 7.9 million Egyptian pounds.

We limited the review of internal controls and compliance to the issues in this report and conducted the audit in accordance with generally accepted government auditing standards.

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PART II - RESULTS OF AUDIT

A. Findings and Recommendations

1. Were Pollution Control Activities Being Timely Implemented?

The first six years of IPP's environmental activities were focused primarily on defining the extent of Egyptian public sector industry's pollution problems and the completion of in-depth feasibility studies at 15 companies for renovating production systems and controlling pollution. In October 1984, an A.I.D.-financed procurement for 16 separate pollution control activities at 6 public sector companies was initiated. All these tasks should have been completed within 3 years, or by October 1987. At the time of our audit, 9 tasks at 4 companies remained active, while only 2 had been completed and were functioning as intended. The remainder had been eliminated or were inactive for various reasons. Protracted contractor selection, inefficient and inadequate performance, and inadequate provisions for technical assistance and training, according to company officials, have seriously delayed and, in certain instances, aborted the implementation of pollution control activities. Consequently, after more than 11 years of project activities and the expenditure of \$14.7 million and LE7.9 million, there had been little if any reduction in public sector industrial pollution in Egypt. However, several significant pollution control tasks were nearing completion and much progress has been made after the start of this review.

Despite its troubled implementation record, USAID/Egypt has repeatedly extended the life of this subproject and was even planning to initiate two new complex pollution control tasks. We questioned whether these activities should be undertaken so late in the project and expressed serious reservations that they would be completed within the time frame of the fifth and latest PACD extension.

Recommendation No. 1

We recommend that USAID/Egypt critically reassess the feasibility of recently authorized pollution abatement initiatives at the MISR Chemical Company and SEMADCO in the light of past experience in order to determine whether A.I.D. funding for these activities continues to be justified.

Recommendation No. 2

We recommend that USAID/Egypt monitor contractor-provided training and review training assessment reports in order to determine the budgetary implications of any requests for additional training.

Recommendation No. 3

We recommend that USAID/Egypt determine requirements for additional technical assistance and assess GOFI's contracting capabilities for the procurement of any additional technical assistance that may be required, in accordance with Mission Order No. 19-14.

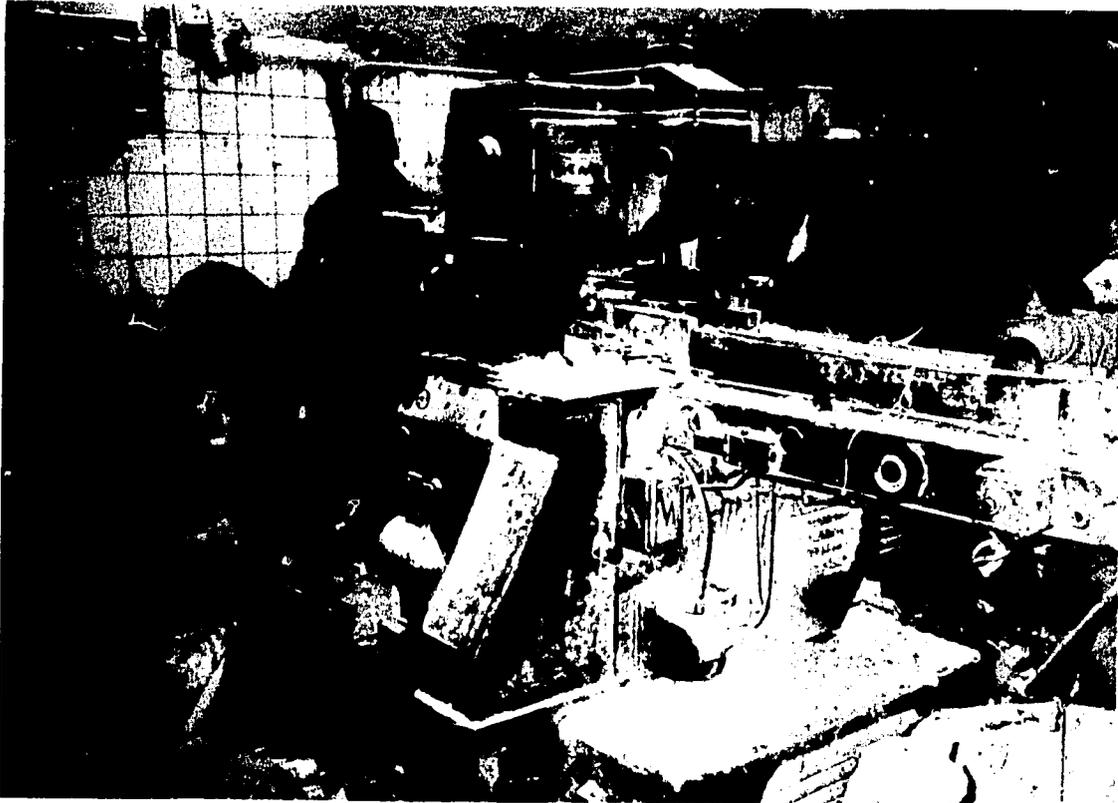
Discussion

The main objective of the Industrial Pollution control subproject was to curtail industrial pollution through the introduction of technical assistance and specially designed capital equipment. For this purpose USAID/Egypt obligated \$28.5 million and the GOE agreed to provide \$9.2 million in equivalent Egyptian pounds. It was the GOE's expectation that pollution control equipment would eventually be procured for 50 or more factories in selected industries. The successful completion of these tasks was also expected to have a multiplier effect on other companies by providing models of pollution control facilities.

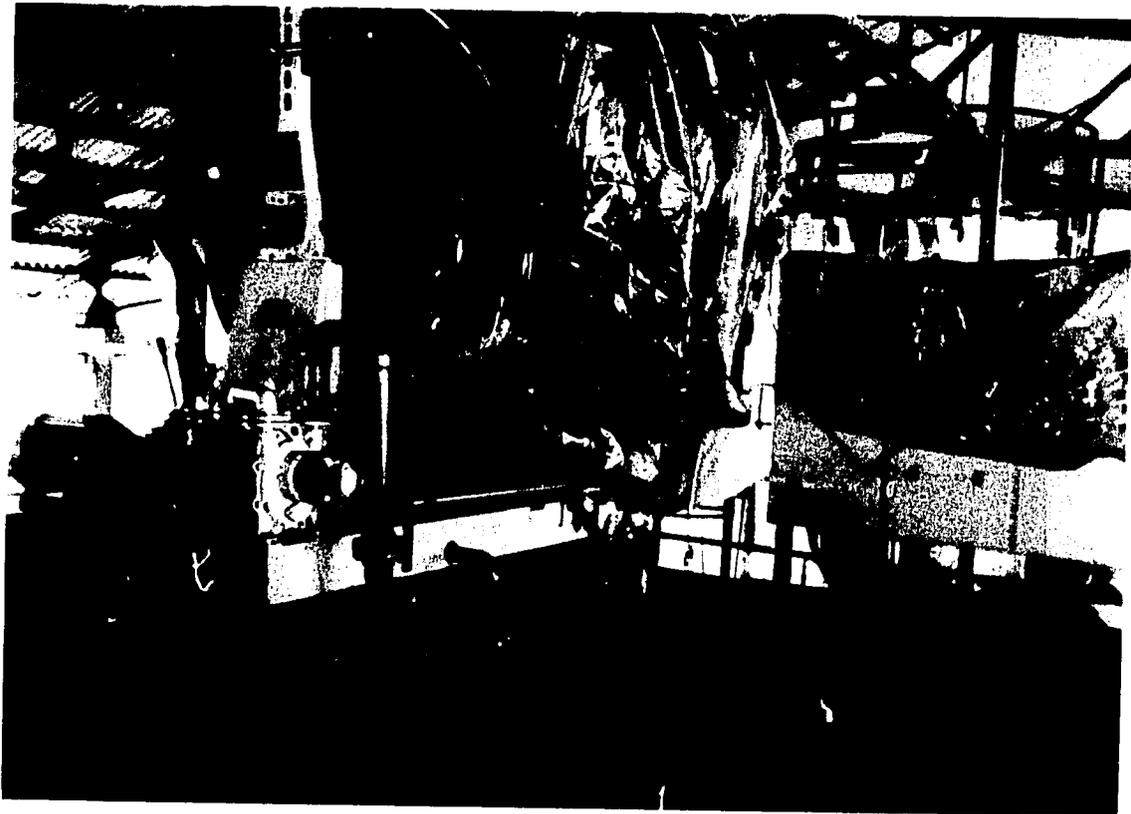
Early project activities were directed primarily at determining the extent of industrial pollution in Egypt through industry surveys and studies. In-depth feasibility studies for renovating production capabilities and the installation of pollution control systems were made for 15 public sector companies. However, after 11 years of project activities, 5 PACD extensions, the expenditure of \$14.7 million and LE7.9 million (GOE's contribution), there had been little if any reduction in public sector industrial pollution in Egypt. Only two minor pollution abatement tasks had been completed and were working as intended. Several other tasks were nearing completion, however.

In October 1984 the GOE implementing agency, the General Organization for Industrialization (GOFI), issued an invitation for bids (IFB) for the detailed design and construction of 16 pollution abatement systems for 6 public sector companies in different industries. This came more than a year after the original PACD and after 6 years of environmental surveys, conceptual studies and the expenditure of about \$6 million in subproject designs.

EGYPTIAN STARCH, YEAST AND DETERGENT COMPANY (ESYD)

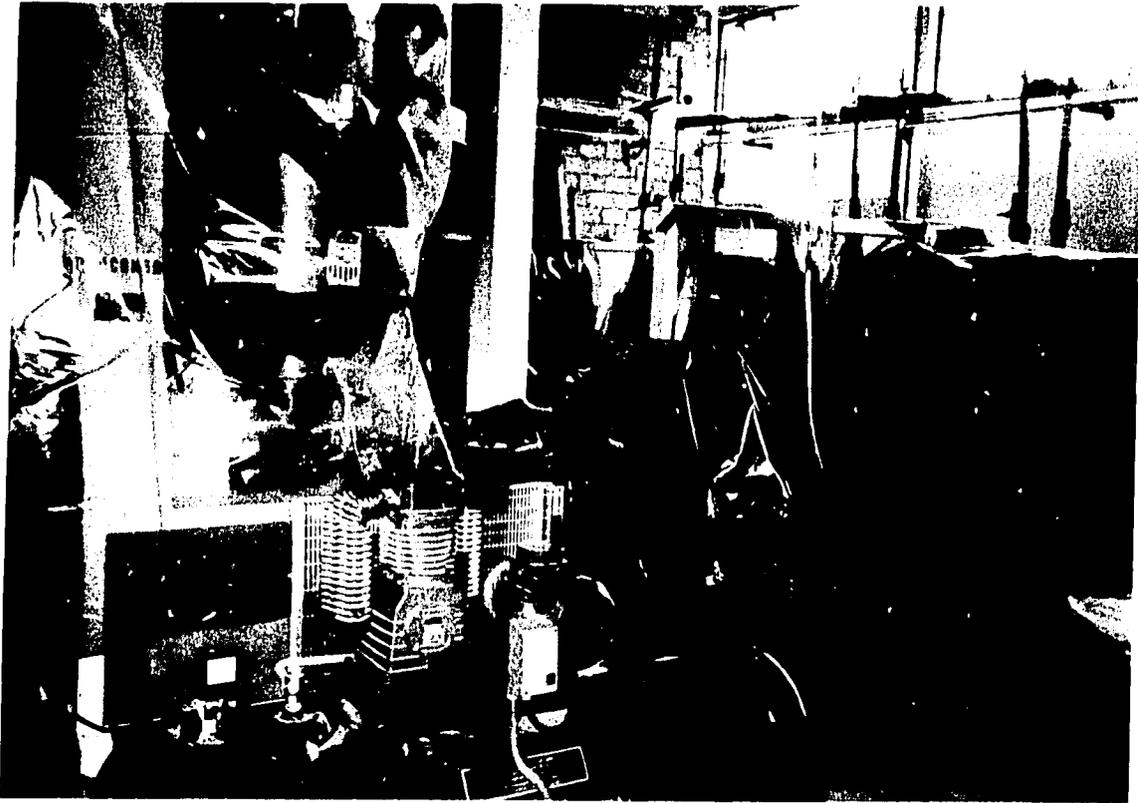


Currency Yeast Production Equipment. Note that Some Yeast is Lost During the Production Process

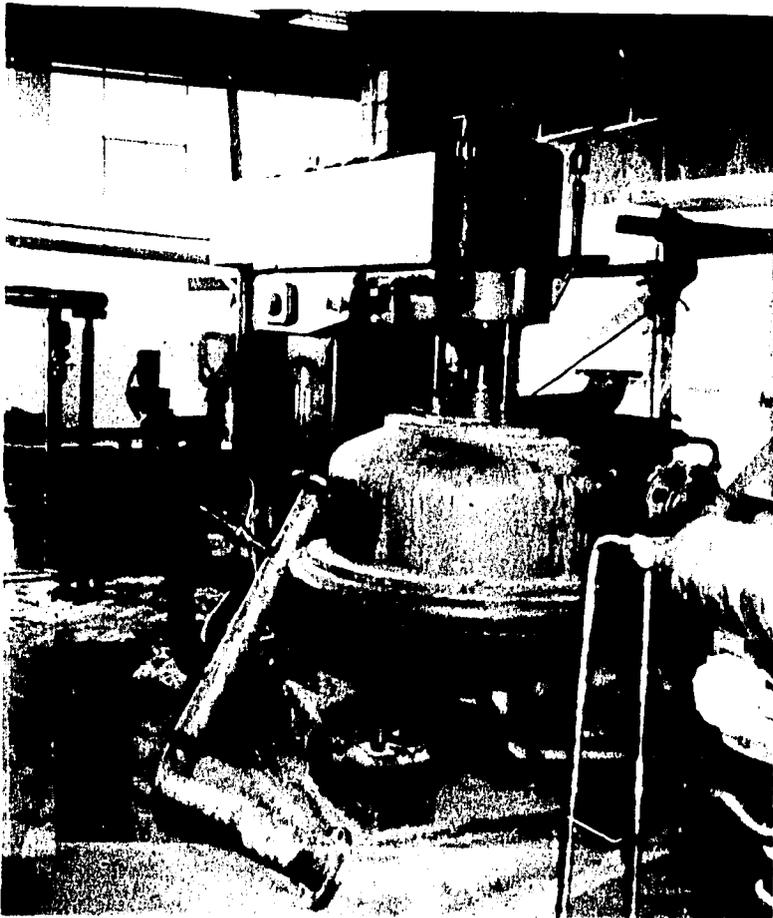


Newly Acquired Vacuum Filtration and Packing System. Equipment is Expected to Increase Production of Yeast and Reduce Waste (Appendix 2, Task No. 1)

EGYPTIAN STARCH, YEAST AND DETERGENT COMPANY (ESYD)



Idle Equipment at ESYD Because of a Temporary Worldwide Shortage of a Type of Potato Starch (Appendix 2, Task No. 1)



More Idle Equipment at ESYD Because of Technical Problems (Appendix 2, Task No. 4)

All tasks should have been completed in no more than three years, or by October 1987. According to a cognizant official, the contractor selection process and mobilization of the contractor should not have taken longer than 18 months, and actual contract performance (as agreed to by all contracting parties) also should not have exceeded 18 months.

More than five years after the issuance of the IFB, only two tasks were completed and operating as intended. However, several others were nearing completion. Selection of a contractor (Merscot-ECG) and execution of contracts required almost two years. It took another ten months to issue letters of credit for each contract and bring all contracts into force in April 1987. As of February 1990, over five years after the IFB, nine tasks remained incomplete.

Appendix 2 provides a status summary of each of the 16 Merscot-ECG tasks started. The exhibit also describes two new tasks approved late in 1989 (one of which had previously been deleted from the original 16 tasks) and the activities leading to the establishment of a pollution control laboratory.

Troubled Implementation

Implementation delays were caused by protracted contractor selection, inefficient and inadequate contractor performance, and inadequate provisions for technical assistance and training.

Contractor Selections - The three major contracting actions performed by GOFI under the Industrial Pollution Control subproject took far longer than expected. It took two years to select the principal design stage technical assistance (T/A) contractor (Weston International, Inc.) and execute a contract. It took 20 months to select the prime contractor (Merscot-ECG), and three years to select and execute the contract with GOFI's equipment supplier for its test laboratory at El Tebbin.

Technical Assistance and Training - The Merscot contracts with each public sector company require Merscot to provide training and technical assistance prior to and during initial start-up and acceptance testing. We were advised by Egyptian plant managers, however, that further training and technical assistance would be required to ensure the operation and sustainability of the acquired systems. The Mission's project officer told us that additional requests for training and technical assistance would be carefully considered and approved, if warranted.

The extent of the potential training and technical assistance shortfalls could not be objectively determined because no training assessments or detailed training plans had been prepared for each company. Also, there was no formal training follow-up system

as required by Mission Order No. 10-1 (February 8, 1989) for in-country training activities. The Mission Order was not yet in effect at the time of the contract award.

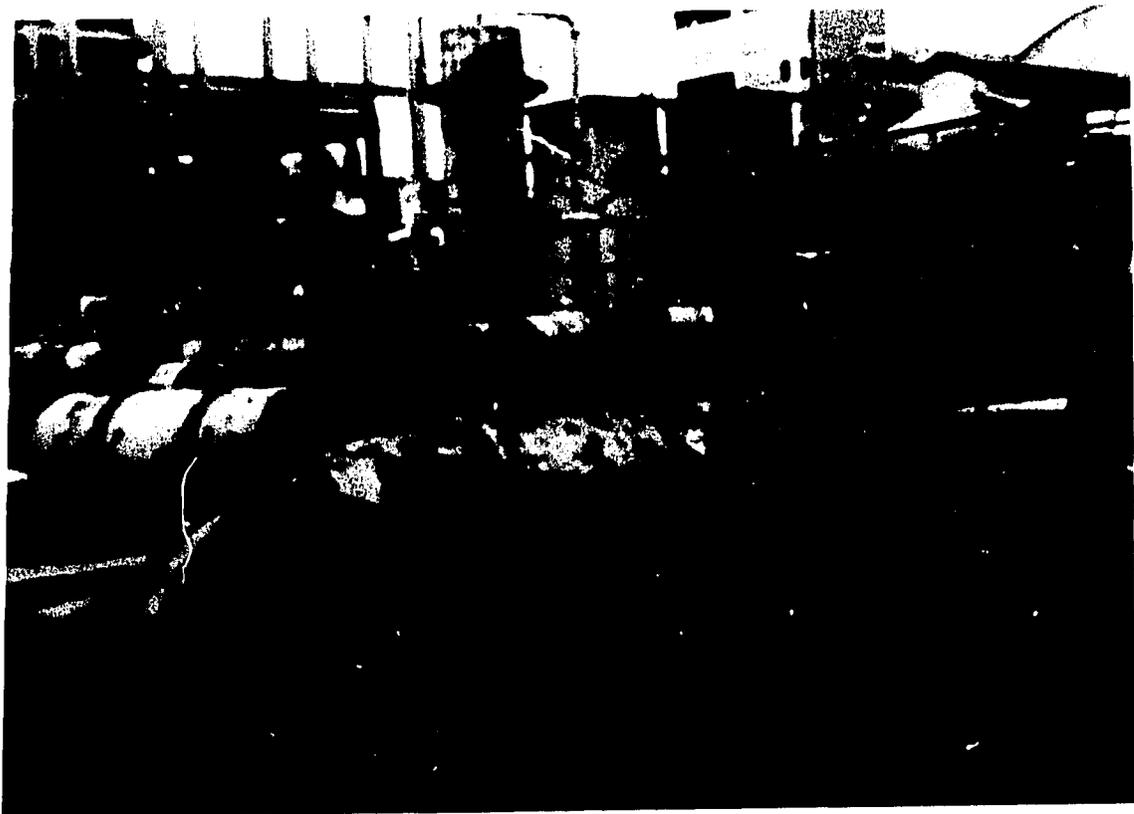
Contractor Performance - A former project officer stated:

Mercot-ECG's implementation of the environmental subactivities of the IPP project has been characterized by repeated failure to complete work by task deadlines and contract termination dates. Both have slipped by again and again, accompanied by . . . promises to do better and requests for USAID approval of new contract extensions.

Mercot-ECG's performance has been marked by contractual disputes, late deliveries of equipment, installation of faulty equipment, and repeated design modifications. The contractor is performing under firm-fixed-price contracts totalling about \$11.4 million and LE3.5 million (as adjusted for task deletions). The Mission has been officially notified of \$5.2 million in claims resulting from disputes, delays and other factors. However, because this is a host country contract A.I.D. is not a party to it, but has certain monitoring, financing and approval responsibilities. A.I.D.'s potential liability resulting from the contractual disputes and the associated cost claims is currently not known.

Recently Planned Pollution Abatement Tasks

The initiatives approved in late 1989 were the design and construction of a mercury removal and recovery system (estimated to cost \$1.8 million) at MISR Chemical Company located in El Max, Alexandria, and an effluent ammonia purification system for the Urea Plant of SEMADCO that was planned to cost about \$2.5 million.



Planned Construction Site for a Mercury Removal and Recovery System at MISR Chemical Company

These new activities were to be completed before the current PACD expires in mid-1992. Any delays would therefore require an additional PACD extension. The planned schedule for the implementation of the design and construction initiatives for MISR Chemical and SEMADCO was:

<u>Benchmark</u>	<u>Date</u>
Approval of IFB	January, 1990
Award of contracts for engineering design and construction	February, 1990
Award of supply contracts for equipment	September, 1990
Delivery and installation	December, 1991
Final acceptance	June, 1992

Award of the engineering design and construction contract was planned to take only one month. Needless to say, based on past project delays, we viewed this time schedule as highly unrealistic.

Feasibility Considerations

A USAID technical review of the initiative planned for MISR Chemical resulted in an engineering opinion that the task would take at least three years with an experienced and competent T/A contractor. The plans for the initiative at SEMADCO, however, have not been subjected to USAID technical review. We understand that the concept for this effort has not yet been documented and that there were no feasibility studies, detailed cost estimates or other substantive technical and financial planning documents.

We were also advised that a firm called Egitelec is being considered by the Ministry of Industry as the prospective T/A contractor. However, a technical review of Egitelec's submitted credentials indicated that they have not had experience with pollution abatement projects.

Contracting with Public Sector Firms

In January, 1984, the Mission approved Egitelec as a subcontractor for another IPP task. Because Egitelec is a Law 43 joint-venture company primarily owned by GOE public sector companies and the selection of this firm by GOFI was non-competitive, the

Mission processed a one-time waiver. The Mission's legal counsel, however, advised that A.I.D. take a firm stand and discourage the use of government owned companies:

If AID is indeed promoting the concept that the private sector market place is the most efficient allocator of resources and that competition, true competition, among private sector firms will result in the most qualified firm receiving the contract, then the selection process used for obtaining the services of Egitelec is exactly contrary to what should be our stated policy.

We believe that this advice is still valid today. We also noted that the Mission has not made an assessment of GOFI's contracting capabilities as required by Mission Order No. 19-14. We therefore believe that an assessment of GOFI is still required so as to ensure that the best qualified firm is selected for furnishing any additional technical assistance that may be required under this subproject and to use the private sector when possible.

In summary, unless the planned approach for the new initiatives at MISR Chemical and SEMADCO differs significantly from the previous implementation approach, which does not appear to be the case, we seriously doubt that the planned initiatives can be completed prior to the project's latest PACD of June 1992.

Management Comments on Recommendations

No. 1

The Mission has accepted the recommendation and stated that it will delete the recently approved tasks valued at \$4.3 million. Although not stated in the Mission's formal response, we have been advised that this amount will be reprogrammed at the time the project ends or before. Accordingly, the recommendation is considered "resolved" and may be closed upon receipt of a copy of the executed PIL formally deleting these two tasks.

No. 2

USAID/Egypt informed each company that change orders for additional or supplemental training related to the operation of the new systems would be favorably considered. At the same time, however, the Mission disclaimed formal responsibility for contractor-provided training since it is not a party to contracts.

RIG/A/C Response

There appears to be partial agreement with the intent of Recommendation No. 2. When the auditors identified a need for additional training at El Tebbin laboratory, in the presence of the Mission's Deputy Director for Finance and Investments, immediate action

was taken to provide an additional \$50,000 for training. The Mission, however, rightfully demurred from assuming a "hands-on" role in determining training requirements under what are supposed to be turnkey contracts. We believe that Mission project officers should, at a minimum, take a more active role in monitoring the training delivered under turnkey contracts. Two examples demonstrate why:

There was no monitoring information in Mission files about the training delivered under the Merscot contracts. A detailed technical report, containing an assessment of the start-up training was made by one equipment manufacturer. This report apparently contained many recommendations for improving the training. The Mission's project officer, however, had not been made aware of the report's existence. The report should be helpful to review future requests for more training and to determine any budgetary impacts.

For one contract about \$42,000 was deleted for "hands-on" training by mutual agreement between Merscot and the Egyptian Leather Company because the prime contractor was unable to provide the training as specified in the contract. The funds were apparently used to upgrade and repair roadways. However a request for additional training was never submitted even though the Mission's project officer had asked the company to submit one. Training requirements need to be documented to assess the budgetary impacts.

Because we were advised by Company managers that more training was needed and because training evaluation results were not available at the companies or in Mission files, we were unable to evaluate the budget implications of any additional training requirements. With the additional technical expertise provided by the Mission as a result of Recommendation No. 3, the Mission should be able to better monitor contractor-provided training. Accordingly, Rec. No. 2 is closed upon report issuance.

No. 3

USAID/Egypt has provided additional technical expertise by transferring the project to the Mission's Engineering Division for further implementation. Also, an additional engineer has been hired to strengthen project management. These measures have negated the need for further contracting actions by GOFI.

RIG/A/C Response

Based on the Mission's comments, Recommendation No. 3 is considered "resolved" upon issuance of this report. It may be closed upon receipt of a copy of the executed Personal Services Contract that the Mission plans to award within 30 days' of this report's issuance.

2. Was USAID/Egypt's Monitoring of Host Country Contributions Adequate?

Expected GOE contributions of \$9.2 million for the Industrial Pollution Control subproject were not effectively monitored by USAID/Egypt. The GOE's implementing agency, GOFI, had not been asked to report its contributions to the Mission, even though this is required by Mission Order No 3-31 (March 16, 1989). There was therefore no assurance that the \$9.2 million contribution had been made as agreed.

Recommendation No. 4

We recommend that USAID/Egypt obtain from the GOE implementing agency, GOFI, periodic counterpart contribution progress reports as required by Mission Order No. 3-31.

Discussion

The Foreign Assistance Act of 1961, as amended, requires countries receiving development assistance funds to contribute at least 25% of the cost of projects. This requirement does not apply to the Industrial Pollution Control subproject because it is financed with Economic Support Funds. Although not required to do so, the Mission obtained an agreement from the GOE to make significant contributions in cash and in kind to IPP. The IPP grant agreement of August 31, 1978 (as amended) commits the GOE to make a contribution of \$76,718,000 in equivalent Egyptian pounds, of which \$9.2¹ million was to support the Industrial Pollution Control subproject. These were to finance the cost of goods and services required for the project having their source and origin in Egypt.

Mission Order No. 3-31 of March 16, 1989 provides that reasonable attempts be made to introduce GOE counterpart contribution reporting requirements over the six-month period following issuance of the Mission Order. As of January 25, 1990 (10 months after the publication of the Mission Order), the reporting requirements had not been complied with by GOFI under the Industrial Pollution Control subproject nor had the Mission requested such reports to be made.

During the audit, we asked GOFI to provide us with a detailed accounting of its contributions to the Industrial Pollution Control subproject. GOFI officials stated that they had never been asked to provide such an accounting. The GOFI accounting system was therefore not able to provide this information expeditiously. GOFI subsequently provided us with an accounting for about 7.9 million Egyptian pounds (Appendix 3). IPP's 1984 financial plan identified planned GOE contributions of \$9.2 million, in Egyptian pound equivalents, for the Industrial Pollution Control subproject.

¹ The US\$-LE exchange rate in 1978 was \$1 = LE .70

Contributions Not Comparable to IPP Budget GOFI officials stated that they were not aware of a specific plan or budget for agreed-to contributions. Consequently, they had not classified expenses by specific budget categories relevant to IPP financial plans. Specific audit trails that would enable a comparison of actual expenditures with planned contributions had not been maintained and we could not readily determine if the actual contributions made were in accordance with planned GOE commitments or for the purposes stated in IPP's financial plan. Because of the significant amounts of contributions planned, i.e. \$9.2 million, we think that it is important for the Mission to monitor GOE contributions to ensure that they are made as agreed.

Management Comments to Recommendation No. 4

The Mission has requested periodic counterpart contribution reports from GOFI. The first of these reports will be submitted to RIG/A/Cairo when available and closure will be requested at that time.

RIG/A/C Response

Recommendation No. 4 is considered "resolved" and may be closed when a copy of the first contribution report is submitted to RIG/A/Cairo.

B. Compliance and Internal Controls

Compliance

We limited the review of compliance to the issues in this report. Nothing came to our attention that would indicate that USAID/Egypt did not comply with applicable laws and regulations.

Internal Controls

The review of internal control was limited to the issues discussed in this report. We noted one significant internal control problem.

The planning for a significant (\$2.5 million) initiative, i.e. the acquisition and installation of new ammonium nitrate neutralizers and related process control systems for the urea plant of SEMADCO, had not received the attention that would normally be provided at the start of a project through the normal planning process which relies on appropriate justifications, and documentation of these justifications in project papers, feasibility and environmental studies.

Nothing else came to our attention that would indicate that areas not reviewed suffered from inadequate controls.

C. Other Pertinent Matters

Host Country Contribution Eligibility Undefined

Although the GOE had committed to contribute \$9.2 million for environmental activities, the nature of these contributions had not been defined. We were consequently unable to determine if the contributions (7.9 million Egyptian pounds) claimed by the GOE were eligible.

Customs Duties - LE221,539 Standard A.I.D. grant provisions require that the grant be exempt from any taxation or fees imposed under laws in effect in the territory of the grantee. The grantee in the case of IPP is the GOE. It therefore seems questionable that GOFI should pay customs duties on IPP imports and that such payments be regarded as GOE contributions.

Interest Expense - LE1,284,519 GOFI officials explained that any expenditures for IPP not specifically provided through GOFI's budget must be financed with loans from the National Investment Bank. The interest charges incurred are then counted as a GOE contribution. Although there are apparently no criteria regarding the eligibility of interest expenses for host country contributions, federal cost principles as applied to other aid recipients either classify interest expenses as unallowable costs or regulate the eligibility of these expenses. For example, OMB Circulars A-21 and A-122 state:

Costs incurred for interest on borrowed capital or temporary use of endowment funds, however represented, are unallowable.

The allowability of the "cost of money" for federal contracts is subject to the criteria established by Federal Acquisition Regulation 31.205.

Consultation Fees - LE1,445,000 AID Handbook I, Part VII and Mission Order 3-32 (March 12, 1989) provides policy and procedures for approving costs of the A.I.D. program which are called "salary supplements." The Handbook states that A.I.D. discourages salary supplements except in very special circumstances. The Handbook further requires that documentation of the legality of such payments under host country laws and regulations should be maintained as part of the project files. The Mission Order, however, is not applicable to GOE contributions and does not address the eligibility of salary supplements as host country contributions.

USAID/Egypt reviewed our observations regarding the costs described above, found that the criteria cited were not applicable to GOE contributions, and raised no objection to any of them being counted as a counterpart contribution. Consequently, we are making no recommendation on this matter.

Host Country Contracting Capabilities Not Assessed.

Mission Order 19-14 implements A.I.D.'s April 1983 Payment Verification Policy statements. The statements require that host country contracting capabilities be assessed when host country contracting is proposed as a means of implementation.

Not until November 1989 did the Mission complete an assessment of one of the six public sector companies receiving pollution control assistance. However, the primary host country contracting agent, GOFI had not been assessed. Consequently insufficient prequalification actions were taken during the selection process for the prime construction contractor. Prequalification actions are required by A.I.D Handbook 3, Supplement 15, Chapter IV F. Also, in at least one instance, a non-competitive selection was made for the procurement of technical services. Another non-competitive selection for the procurement of technical services appears was under consideration (i.e., for the implementation of the planned pollution abatement initiatives at the MISR Chemical Company and SEMADCO). However, currently no further GOE contracting actions are planned for this project.

Retroactive Approvals of Contract Activities

During the construction of pollution abatement tasks, the Mission did not approve major contract changes until after the contractual parties had negotiated and signed contract changes. For example, under the Merscot-ECG contract with the Egyptian Starch & Yeast Company, a contract amendment valued at \$712,149 was signed on November 27, 1988. The Mission, however, did not approve the amendment until August 1, 1989.

Also on October 18, 1989 the Mission retroactively approved a source and origin waiver for \$475,000 in equipment that had already been installed at the Starch and Yeast Company. Because the contract is nearing completion, we are not making any recommendation on this matter.

Project Committee

We noted that the Environmental Activities subproject committee had met on several occasions. We were unable to evaluate the effectiveness of this committee because committee minutes had not been kept and, according to the project officer, its decisions had not been documented. However, a new Mission Order No. 3-35 (December 7, 1989) now requires that committee deliberations are documented and a recommendation about this condition is therefore not needed.

Part III - APPENDICES



CAIRO, EGYPT

UNITED STATES AGENCY for INTERNATIONAL DEVELOPMENT

AUG 22 1990

MEMORANDUM

TO: Reuben Hubbard, Acting RIG/A/C

FROM: Charles Weden, Acting Mission Director

SUBJECT: Draft Report on the Audit of the Environmental Activities
Subproject Under USAID/Egypt's Industrial Production
Project No. 263-0101

Following is the Mission's response to the subject draft report:

EXECUTIVE SUMMARY:

The \$28.5 million Environmental Activities Subproject (EAS) is one of several components of the \$130 million Industrial Production Project (IPP). The IPP was conceived and designed in the late 1970's at a time when USAID's program in Egypt was relatively new and growing rapidly. Typical of the large, multi-component projects which were initiated by USAID during those years, the IPP was to be the centerpiece of USAID's assistance program for Egyptian public sector industry. At that time, the Mission did not know how difficult and time-consuming it could be to introduce change in public sector industry. As a result, the originally estimated five year life of project proved to be highly unrealistic. Once the project was approved, an industrial pollution survey had to be carried out, target companies selected, and specific sub-activities designed for subsequent pollution control investments. This alone took seven years. In retrospect, a reasonable planning period for a project of this nature would have been 10 - 12 years. In terms of timely and effective implementation, the EAS has been a problem project for the Mission for a number of years, despite our best efforts to confront an array of thorny problems.

- 2 -

In any case, over the past year USAID has performed an extensive analysis as to how to best see the project through to completion. The auditors have independently confirmed and endorsed management's planned approach, which is essentially to focus project resources only on the completion of activities which are already ongoing, i.e., no "new starts."

However, the audit report also states at one point that: "...after more than 11 years of project activities and the expenditure of \$14.7 million and LE 7.9 million, there had been little if any reduction in public sector industrial pollution in Egypt." We believe that this statement is not consistent with the tangible achievements of the EAS. Notwithstanding the implementation problems, we believe that this project has achieved its stated purpose of improving the environmental effects of selected industrial plants in that it has resulted in the annual control of hundreds of thousands of tons of various pollutants, as well as increased awareness of the importance of industrial pollution control within public sector industry overall. 1/

The audit was performed at a time when considerable management effort already had begun to turn the tide toward completion of most of the pollution control tasks. The audit report therefore presents an out-of-date "snapshot" of the EAS which does not accurately depict the quantitative abatement of industrial pollution which has been achieved. Our response to audit recommendation No. 1 provides a detailed description of project achievements. 2/

RESPONSE TO RECOMMENDATIONS:

Recommendation No. 1

We recommend that USAID/Egypt critically reassess the feasibility of recently authorized pollution abatement initiatives at the Misr Chemical Company and SEMADCO in the light of past experience in order to determine whether A.I.D. funding for these activities continues to be justified.

USAID Response

Although our analysis indicates that the recommended action is appropriate, the preamble to the recommendation, as well as the discussion, is unbalanced and does not present a fair picture of the project as a whole. 3/

The stated purpose of the Environmental Activities Subproject (EAS) was to "improve the environmental effects of selected industrial plants." A critical prerequisite to achieving this purpose was the identification and detailed analysis of the pollution control

- 3 -

problems and needs of the Egyptian industrial sector. At the time of project design, such an assessment had never been carried out in Egypt, despite the fact that Egypt has a sizeable industrial sector. The EAS represented the first attempt by any entity, Egyptian or foreign, to undertake a comprehensive environmental assessment of the public industrial sector. This industrial pollution survey, which was essential to sound implementation of the environmental subproject, was performed by the Ministry of Industry's (MOI) General Organization for Industrialization (GOFI) from 1979 - 1981 with the assistance of a U.S. Environmental Protection Agency (EPA) expert under a project-funded participating agency services agreement (PASA). The survey encompassed 80 industrial facilities covering the bulk of virtually every manufacturing sector, i.e., chemicals, foodstuffs, metallurgical, textiles, wood, plastics, etc.

The industry survey was followed by the conceptual design phase of the project, in which 11 companies (13 separate facilities) were selected out of the 80 originally surveyed (on the basis of the severity of their pollution problems), to undergo detailed pollution audits and conceptual design of required control technology. The conceptual design phase was carried out from 1982 - 1985 by GOFI with the assistance of a project-funded U.S. contractor (Weston International). USAID technical management of the conceptual design phase was provided by a second EPA PASA employee. This phase of the project generated a comprehensive feasibility study and pollution abatement plan for each of the 13 facilities, amounting to several hundred pages of technical narrative, drawings, and related documentation for each site, including process description, source testing results, problem definition, control alternatives, conceptual design of facilities, capital and operating cost estimates, and abatement and implementation plans based on a recommended alternative. 4/

The final phase of the project was detailed design/construction. Due to funding constraints and competing priorities within the Industrial Production Project (IPP), six companies were selected for capital assistance in pollution control out of the eleven studied under the conceptual design phase, again on the basis of the relative severity of the specific pollution problems facing each plant. The construction phase is being implemented by the individual companies under separate host country contracts with Merscot International-ECG, a joint venture U.S.-Egyptian contractor. Detailed design work on 15 separate tasks began in 1986 5/ and, with one exception, the last of the installed systems should complete acceptance tests this year.

- 4 -

While it is undeniable that the construction phase has experienced delays and other problems, the audit was performed at a time when considerable management effort already had begun to turn the tide toward completion of most of the pollution control tasks. The audit report therefore presents a "snapshot" of the EAS which does not accurately depict the quantitative abatement of industrial pollution which has been achieved to date. Appendix 2 of the report, "Status of Industrial Pollution Control Subproject Activities," is replete with technical and factual errors as well as being so outdated as to be essentially useless. Specific comments on Appendix 2 are provided elsewhere in this response. Key accomplishments of the construction phase are presented below: 6/

- Task 1 reduced product loss by 90 percent and is eliminating 2,500 metric tons per year of organic waste.
- Task 2 is neutralizing 1.5 million gallons per day of acidic process wastewater.
- Tasks 5 and 6 are controlling approximately 300 metric tons per year of organic waste.
- Task 7 equipment collects and disposes of 2,500 metric tons per year of industrial solid waste.
- Task 9 is trapping and neutralizing 1.5 metric tons per year of hazardous chlorine gas.
- Task 11 is resulting in the collection and safe disposal of 1,800 metric tons per year of toxic heavy metal waste.
- Task 12 is controlling 360,000 metric tons per year of suspended solids and 51,000 metric tons per year of oil and grease that was previously discharged as raw industrial wastewater straight into the Cairo sewer system.
- Task 16 is preventing the discharge of 7,200 metric tons per year of caustic ammonia waste into a canal that drains into the Nile River.

Equally disappointing is the fact that the audit completely overlooked the solid accomplishments and significance of the survey and conceptual design phases of the EAS. As stated above, the purpose of the EAS was to "improve the environmental effects of selected industrial plants." There was never any intent in the project design, implied or otherwise, to solve all of Egypt's industrial pollution problems. The EAS was essentially a demonstration activity intended to show the value and practicality 7/

- 5 -

of applying common engineering and scientific principles to the control of industrial pollution. In this respect the EAS has been successful, in that the project has significantly increased awareness within the public sector of the importance of industrial pollution control. For example, as a result of the EAS, GOFI established a pollution control unit which reviews all permit applications for new or expanded industrial facilities (public and private) in Egypt to ensure the inclusion of appropriate pollution control measures in the design of the proposed facility prior to issuance of a construction permit. The EAS financed the creation of a modern industrial pollution control laboratory which is fully equipped to perform research as well as compliance monitoring for industrial clients, a successful \$1 million activity which the audit report only mentions in passing.

8/

As a result of exposure to the concepts and practice of industrial pollution control through the efforts and outreach of the EAS, today in Egypt it is a rare public sector industrial manager who is not convinced that "pollution prevention pays." The "multiplier effect" of the EAS is made apparent by the number of requests for assistance under the project from companies which were not included in the six chosen for capital improvements.

9/

Regarding the feasibility of further pollution abatement initiatives at Misr Chemical Industries (MCI) and SEMADCO Fertilizer, the Mission has performed an in-depth assessment of project status in conjunction with the recent transfer of the IPP from the Office of Finance and Investment in the Trade and Investment Directorate (TI/FI) to the Office of Engineering in the Development Resources Directorate (DR/ENG). DR management has scrutinized the EAS in light of its extensive experience with other complex construction activities involving GOE entities and has determined that, allowing for prudent contingencies, there is insufficient time available within the IPP PACD of June 30, 1992, to carry out any new pollution control tasks. Accordingly, the Mission is preparing a project implementation letter (PIL) to GOFI which will delete the previously proposed activities at SEMADCO and MCI. The MCI activity, mercury pollution control, was slated for implementation under the original project (as Task 10), but was never implemented due to a contractual dispute between MCI and Merscot-ECG, the original contractor. Given the urgency of MCI's mercury pollution problem, the Mission will investigate alternative funding possibilities (outside of the IPP) to assist MCI in implementing the task, on the condition that MCI resolves its dispute with Merscot-ECG prior to any A.I.D. funds being made available.

- 6 -

We will provide you a copy of the PIL deleting the two new tasks when executed and request that this recommendation be closed.

Recommendation No. 2

We recommend that USAID/Egypt design and implement a formal training system in accordance with Mission Order No. 10-1 to ensure the sustainability of the acquired environmental control systems and provide for evaluation and follow-up of the procured training.

USAID Response

As we informed you during the exit conference, this recommendation is not applicable to the EAS, and thus is not actionable by the Mission. We must therefore request that it be withdrawn.

Mission Order 10-1, and Handbook 10 from which it is derived, involve the design of formal training systems usually as an adjunct to a particular project activity in which the host country implementing agency (typically a government bureaucracy) requires institutional support in order to ensure achievement of the project purpose(s). This scenario does not apply to the EAS, for a number of reasons.

10/

First, the EAS consists of equipment and related engineering services provided on a turn-key basis to Egyptian industrial companies under host-country contracts. The turn-key package includes various types of training, tailored to the equipment being provided and the needs of the staff and management who will be responsible for its operation. Training is an integral part of the contract, and is carefully considered and negotiated by the company prior to execution of the contract. USAID is not a party to the contracts between the EAS companies and Merscot-ECG, and is not in a position, either technically or legally, to dictate the type and amount of training to be provided to the individual companies, all of which have different needs. Company-specific needs are best known to the company management. Company chairmen, all of whom are responsible to the Minister of Industry for equipment utilization and attainment of production quotas, recognize that it is in their best interests to ensure that sufficient training in the operation of any new equipment item is obtained. Such training is highly specialized, i.e., specific to the equipment item, and is normally provided by representatives of the equipment supplier as a part of the package of goods and services associated with the new equipment. Acceptance of any new system is predicated on the successful completion of acceptance tests in which the system is

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- 7 -

operated for a specified period of time by company personnel with oversight from the supplier's representative. If, after completion of the acceptance tests, the company's management determines that further training for company staff is needed, this can be arranged by means of a change order in the contract with the general contractor. USAID has indicated to all companies under the EAS that any change orders for additional or supplemental training related to the operation of a new system will be favorably considered.

Also, without exception (and by design) none of the systems provided under the EAS introduce "exotic" technology into the recipient facilities. In every case, operation of the new equipment is within the technical capability of existing staff, with the result that there is no need for remedial, academic-type training. As stated above, the turn-key contracts specify the particular training required to familiarize company personnel with operation of the new equipment.

12/

Recommendation No. 3

We recommend that USAID/Egypt determine requirements for additional technical assistance and assess GOFI's contracting capabilities for the procurement of any additional technical assistance that may be required, in accordance with Mission Order No. 19-14.

USAID Response

In conjunction with the intra-Mission transfer of the IPP, a determination was made that specialized construction management expertise is required for the successful and timely completion of the EAS. Accordingly, the Mission has initiated procurement of such services in the form of a senior U.S. engineer under a personal services contract (PSC) (Attachment A is a copy of approved PIO/T). GOFI has approved the use of project funds for these services (attachment H to the PIO/T). The individual to be hired will be a senior professional engineer with direct experience in industrial construction activities who can understand and apply AID regulations to the completion of the subproject. The successful applicant will have the credentials and stature sufficient to deal with U.S. contractors and suppliers and their Egyptian clients in a firm, evenhanded way. The PSC is projected to be on board by November 1, 1990, and will be retained until the IPP PACD, if necessary.

Assessment of GOFI's contracting capabilities is unnecessary for two reasons. First, the PSC engineer described above will be hired under a direct AID contract, thus requiring no contracting action on the part of GOFI. No other new technical assistance contracts are

13/

- 8 -

contemplated, either AID-direct or host country. Second, GOFI is not a party to any of the existing host country contracts (HCC) under the EAS. Originally, GOFI was to enter into a single HCC with Merscot-ECG for pollution control design/construction services for the six beneficiary companies. However, during contract negotiations GOFI elected to assign all contracting responsibility to the individual companies, with the result that Merscot-ECG entered into six separate HCC's financed by the EAS.

In accordance with Mission Order 19-14, the Mission is undertaking a systematic program to assess the contracting and implementation capabilities of each beneficiary company under the IPP (including the EAS). The latest revision of the IPP financial plan (Attachment B is a copy of PIL No. G 120 - L 80), includes an allocation of \$100,000 for the assessment of up to ten IPP HCC agencies. Under the EAS, an assessment of SEMADCO is currently underway (Attachment C is a copy of IQC work order), and similar assessments will be carried out as appropriate for other companies under the subproject.

We request that this recommendation be closed.

Recommendation No. 4

We recommend that USAID/Egypt obtain from the GOE implementing agency, GOFI, periodic counterpart contribution reports as required by Mission Order No. 3-31.

USAID Response

The Mission has prepared a letter to GOFI (Attachment D) requesting the preparation and submission to USAID/Egypt of periodic counterpart contribution reports in accordance with Mission Order 3-31. We will submit the first of these reports to you as soon as it is issued and request that the recommendation be closed at that time.

Recommendation No. 5

We recommend that USAID/Egypt develop guidance as to the eligibility of GOE contributions in general, and determine the eligibility of customs duties, interest expenses and consultation fees in particular.

USAID Response

There is a basic misconception underlying this recommendation, namely, that host-country contributions are subject to the various

- 9 -

regulatory restrictions on uses of AID grant funds. This is not the case, in this or any other project. Given the wide range of host country implementing entities in Egypt, it would be neither feasible nor appropriate for the Mission to develop detailed guidance as to the eligibility of GOE contributions. Such determinations must be made on a case-by-case basis. In the case of the EAS, we believe that all of the GOE contributions cited by GOFI are allowable, as discussed below. We request that this recommendation be withdrawn.

14/

Customs Duties: Standard AID grant provisions do not apply to any customs duties the GOE may have incurred in conjunction with importation of goods pursuant to its contribution to the EAS. Such project costs are normally borne by the GOE implementing agency, and on that basis we see no reason to disallow these costs as eligible contributions.

Interest Expense: The discussion on p. 19 is correct in stating that "there are ... no criteria regarding the eligibility of interest expenses for host country contributions." Federal cost principles as applied to other aid recipients and the allowability of "cost of money" for federal contracts are irrelevant to this case. The Mission has determined that if GOFI found it necessary to supplement its project budget with loans from the National Investment Bank, any incurred interest expenses are eligible as host country contributions.

Consultation Fees: Paragraph III.B of Mission Order 3-32 states: "The Mission Order does not apply to funds supplied from the GOE's own budgetary resources as a 'project contribution'..." USAID respects GOFI's determination that GOE employees assigned to a USAID project (in this case the EAS) are held to a higher level of efficiency and productivity, and that supplemental compensation is indicated in this case.

GENERAL COMMENTS:

We believe the following changes in the audit report should be made to present a more accurate and balanced picture.

1) Executive Summary Section, Para 1:

The IPP PACD extensions were not driven by delays in the EAS alone. In fact, the final task under the EAS should be completed and accepted by or before December 31, 1991.

15/

- 10 -

- 2) Executive Summary Section, Para 2, first item, second sentence:

This should read "Thirteen in-depth feasibility studies were completed."

16/

- 3) Page 1, Para 1:

This narrative confuses the EAS with another component of the IPP, "Capital Subprojects." A number of capital subprojects were implemented to rehabilitate, modernize, and/or expand a number of public sector industrial facilities. The EAS is a separate subproject for the assessment of industrial pollution problems in Egypt and retrofitting of pollution control technology at selected facilities. It is not related to the capital subprojects component of the IPP beyond the fact that it comes under the same funding umbrella.

17/

- 4) Page 1, Para 2, last sentence "Mixed with ... per square mile.":

This should be technically clarified, or else deleted. Does "excessive volume of dust" include naturally occurring (wind-blown) dust, which has little health significance, or refer to anthropogenic (manmade) pollutants only? Is "100 tons per square mile" a measure of deposition, or does it imply ambient volumetric concentration of suspended matter? What is the time factor, i.e., 100 tons per square mile every 24 hours, or per month, year, etc.? Assuming the entire 100 tons per square mile is a 24 hour average measure of suspended particulate matter (a worst-case conservative assumption), and assuming a 10 kilometer tropospheric mixing layer, the 24 hour average ambient concentration would be 35 micrograms per cubic meter, which is less than 15 percent of the maximum level allowed under U.S. EPA's primary national ambient air quality standard for total suspended particulates (260 micrograms per cubic meter, 24 hour average).

18/

- 5) Page 2, Para 1, last sentence "GOFI used ... in different industries.":

GOFI has not contracted with Mercot-ECG under the EAS. As explained in the response to recommendation No. 3, GOFI elected to assign all contracting responsibility to the individual companies participating in the EAS, with the result that Mercot-ECG entered into six separate host-country contracts financed by the EAS. The contract with the Egyptian Sugar Company for Task 15 never came into force for administrative reasons. Task 13 under Mercot-ECG's contract with the Egyptian Leather Company for Tasks 11 - 14 was

19/

- 11 -

deleted for technical reasons prior to contract execution. Tasks 1 and 2 with the Egyptian Starch and Yeast Company are located at its Moharrem Bek facility, while tasks 3 and 4 with the same company are at its Siouff site. In addition, the El Tebbin Institute entered into its own host country contract with Fisher Scientific Company for the design and installation of a pollution monitoring laboratory. Therefore, the sentence should read "Five public sector companies representing various industries entered into separate firm-fixed-price turnkey contracts with Merscot-ECG for the detailed design and erection of a total of 14 pollution abatement tasks at six sites, while the Ministry of Industry's El Tebbin Institute entered into a firm-fixed-price turnkey contract with Fisher Scientific Company for the design and installation of a pollution monitoring laboratory."

6) Page 5, bottom Photograph:

The caption should refer to "Appendix 2 Task No. 1" instead of "Appendix I Task No. 1)." 20/

7) Page 6:

The captions should refer to "Appendix 2" instead of "Appendix I." 20/
It should be noted that the worldwide potato starch shortage (which has since ended) affected Task 1 (top photograph) only. Task 4 (bottom photograph) was undergoing technical adjustment at the time the photograph was taken.

8) Page 7, Para 1, "Were Pollution Control Activities Being Timely Implemented?" (sic):

This paragraph contains a number of factual errors and, as stated above in the response to Recommendation No. 1, presents an unbalanced picture of the project. 21/

Sentence 1 "The first ... controlling pollution.": Thirteen in-depth feasibility and conceptual design studies were carried out. Additional, but less detailed, studies were performed on four public sector cement plants. 22/

Sentence 2 "In October 1984 ... was initiated.": As noted earlier, originally AID financing was to cover the implementation of 15 tasks at six companies. One company elected not to have its contract with Merscot-ECG come into force, which reduced the total to 14 tasks at five companies. 23/

- 12 -

Sentences 4 and 5 "At the ... as intended. The remainder ... various reasons.": One of the 14 contracted tasks was cancelled due to a contractual dispute between the company and Merscot-ECG, leaving 13 tasks to be implemented. As indicated in in our response to recommendation No. 1 above and our comments on Appendix 2 to the audit report below, of the thirteen tasks under implementation, eight have been completed, accepted, and are operational; one has completed acceptance tests, is operational, and will be accepted shortly; two are operational and will start acceptance tests shortly; and two remain under implementation. As detailed in our comments on Appendix 2, the 11 currently operational tasks are making a significant reduction in public sector industrial pollution, controlling hundreds of thousands of tons of pollutants per year.

Sentence 7 "Consequently, after more than 11 years of project activities and the expenditure of \$14.7 million and LE 7.9 million, there had been little if any reduction in public sector industrial pollution in Egypt.": This sentence is not consistent with the facts presented above and should be deleted. The Mission takes exception to such language which unfairly overlooks the tangible achievements of the EAS, especially the survey and conceptual design phases, as well as the annual control of hundreds of thousands of tons of various pollutants.

9) Page 9, Para 1:

The third sentence ("The expectation ... selected industries.") should be deleted. Neither the original 1978 project paper (PP) nor the 1979 or 1981 PP amendments indicated any expectation that "pollution control equipment would eventually be procured for 50 or more factories in selected industries." Table 3 in Section IV of the 1981 PP listed 38 companies (46 plants) under the heading "Possible Pollution Control Sub-Projects." Nowhere was it implied that more than a small fraction of these facilities would receive project assistance. The table indicates a total estimated foreign exchange cost of \$62.75 million for the 46 sites, and notes "\$14.4 million currently allocated."

10) Page 9, Para 2:

As noted previously, conceptual designs were performed for 13 facilities owned by 11 companies. The third sentence repeats the unbalanced view of the project presented in the first paragraph of page 7, and should be deleted for the reasons presented earlier in this response.

- 13 -

11) Page 10, Para 3:

As noted previously, Appendix 2, "Status of Industrial Pollution Control Subproject Activities," contains inaccuracies and needs to be updated. Comments are provided below by task.

Task 1: The task is accepted and operational. There was never any faulty equipment problem. The equipment provided under this task performed adequately from the beginning. Acceptance of the task as a whole was delayed due to a disagreement over the type and quantity of spare parts to be provided. This matter was resolved by means of a technical assessment carried out by USAID project staff. Operation of this task has reduced product losses by 90 percent and controls 2,500 metric tons per year of high biochemical oxygen demand (BOD) organic waste.

Task 2: The task is accepted and operational. Acceptance was delayed due to a problem with lime conveyance. This matter was resolved by means of a technical assessment carried out by USAID project staff. Operation of this task neutralizes 1.5 million gallons per day of acidic effluent.

Task 3: The purpose of the upgraded caustic scrubber and mist eliminator is to control emissions of sulfur dioxide, sulfur trioxide, and sulfonic acid mist, not to produce sulfonic acid. The equipment provided under this task is operational, but the task as a whole is not, due to a breakdown in the Starch and Yeast Company's production facility (the emissions of which Task 3 was designed to control). The task will become operational as soon as the company completes repair work on its plant and will control 17 metric tons per year of sulfurous air pollutants from the sulfonic acid plant.

Task 4: This task provides improved starch/protein separation equipment, not starch production equipment. Remedial design/installation work on this task is proceeding. Start-up and acceptance is expected by September 31, 1990.

Task 5: The steam line was installed, and the task was brought into operation, controlling 300 metric tons per year of organic waste. Subsequently a problem developed with a molten tallow pump. Replacement of the defective pump should be covered under the contractor's guarantee.

Task 6: This task controls 15 metric tons per year of organic waste.

Task 7: This task enables proper disposal of 2,500 metric tons per

- 14 -

Task 8: The oil spill trap was one of several possible solutions to the company's oil spill problem. Eventually the company repaired the oil leak at the source. The trap is still useful, however, as a back-up in the event the leak recurs.

Task 9: This task has been completed, accepted, and is operating satisfactorily, controlling 1.5 metric tons per year of chlorine gas.

Task 10: This task will not be implemented under the EAS. USAID will seek an alternative source of funds, provided that the company and the contractor resolve their dispute first.

Task 11: This task was accepted in August 1989 and has been in continuous operation since that time, resulting in the safe disposal of 1,800 metric tons per year of hazardous heavy metal waste. Successful operation of this task is not at all dependent on the completion of tasks 12 and 14.

Task 12: Acceptance tests have been successfully completed. Official acceptance will occur soon pending completion of various formalities. Task 12 is controlling 360,000 metric tons per year of suspended solids and 51,000 metric tons per year of oil and grease.

Task 13: This task was deleted for technical reasons prior to contract execution.

Task 14: The purpose of this task is to reduce solid waste quantities by enabling the company to process cuttings and other waste material into glue, a marketable product. Installation was completed, but during acceptance tests it became apparent that supplementary equipment will be needed to meet the company's production requirements. A change order is being prepared, and the new equipment should be installed by December 31, 1991.

Task 15: The purpose of this task was to collect and dispose of brown process mud, not just determine if it could be done. The contract with Merscot-ECG was not terminated; rather, it never came into force. The company elected not to bring the contract into force, not because "the task was not considered worth doing," but because the company decided (and then proceeded) to implement the task on its own, without outside assistance.

Task 16: This task is operational, and is controlling 7,200 metric tons per year of caustic ammonia waste. Formal acceptance tests are scheduled in the near future.

- 15 -

El Tebbin Pollution Monitoring Lab: The laboratory has been accepted, is staffed, and all equipment is operational. Full functioning of the facility awaits provision of additional training in the operation of some of the analytical instrumentation. EAS funds have been allocated for the training and preliminary procurement efforts are underway. Mobile test vans are not needed for the successful operation of this facility. The lab was provided with equipment to allow field collection of environmental samples for laboratory analysis. Mobile laboratories would be a useful adjunct, but are not essential. 30/

RIG/A/C's Evaluation of Selected Mission Comments

- 1/ As of the end of audit fieldwork in February 1990, only two minor tasks had been completed and were operating as intended. We therefore did not observe control of "hundreds of thousands of tons of various pollutants."
- 2/ The Mission had begun to provide some additional management attention in order to justify another PACD extension. However, more significant management attention resulted from the audit.
- 3/ The audit report presents an independent assessment of project activities as these relate to the project purpose as stated in the project paper and the Congressional notification of October, 1979.
- 4/ Weston Int'l left Egypt in 1987. RIG/A/C is currently attempting to resolve a dispute regarding Weston's final billings with the assistance of DCAA/Philadelphia.
- 5/ This represents a commendable record of progress in the six months since our audit fieldwork ended. RIG/A/C has not verified these achievements, however.
- 6/ These accomplishments were neither evident nor verifiable during the audit period.
- 7/ Section 611 of the Foreign Assistance Act requires substantive technical and financial planning for all activities expected to cost more than \$500,000.
- 8/ As noted in Appendix 2, at the time of our audit, the laboratory was not operational because additional training was required and mobile test vans were needed to make pollution monitoring more feasible and efficient.
- 9 During the audit, we interviewed company officials at each beneficiary plant. These officials stated that no interest had been expressed by other companies in the tasks undertaken by the EAS. They were not aware of a multiplier effect. In passing, we would note that the GOE has repeatedly expressed no interest in USAID/Egypt's offers to finance a nationwide environmental assessment.
- 10/ Mission Order 10-1, page 11 outlines project manager responsibilities for in-country contractor-managed technical training under construction contracts. A.I.D. Handbook 3, Chapter 9, Appendix 9B provides further guidance for project managers to improve the transition from project implementation to project

operations. These guidelines indicate that a project officer is responsible for knowing what training is needed and whether the training provided under A.I.D.-financed contracts is adequate and sufficient to enable A.I.D. recipients to operate and maintain newly delivered equipment. Contractor-provided training was generally not monitored by the Mission, however. We did note that in June, 1989 one Mission project officer had attempted to monitor training and had asked one company official to document his training shortfalls and submit them to the Mission for review. Training shortfalls exist because the prime contractor was unable to provide the needed "hands-on" training required under the contract. About \$42,000 earmarked for training was used by the company to upgrade and repair roadways. The training shortfalls, however, were never documented and submitted to the Mission, as requested.

- 11/ It is not clear how this disclaimer relates to the last sentence in this paragraph on the following page -- "favorably considered" by whom?
- 12/ These statements cannot be verified because there is no documentation available in the Mission that explains what the technical capabilities of the personnel are or what they should be. Also, there are no training assessments or training evaluation reports available in the Mission.
- 13/ With the Mission's acquisition of additional technical expertise for the EAS implementation, and the deletion of two planned initiatives at MISR Chemical and SEMADCO, we agree that no further GOFI contracting actions are required.
- 14/ Upon consideration of the Mission's arguments, this matter has been relegated to the "Other Pertinent Matters" section of the report.
- 15/ At the time of our audit, the pollution control activities were on the IPP implementation schedule's critical path. As a result of audit Recommendation No. 1, the Mission decided to cancel the two activities not yet started. In November 1989, the project officer had planned to complete the remaining activities on or before December 31, 1989. The newly estimated completion date of December 31, 1991, therefore represents an additional schedule delay of two years that was not apparent during the audit, and was therefore not commented on in the draft audit report.

- 16/ Feasibility studies were conducted for the 11 companies discussed on page 3 of the Mission's comments as well as for four additional companies, cement plants. Feasibility studies were therefore conducted at a total of 15 companies.
- 17/ The paragraph provides background information about the IPP "umbrella" project. This information is necessary to appreciate EAS' management environment.
- 18/ The statistic is attributable to a 1988 World Bank environmental study of pollution in Egypt. Some additional information is provided in a 1985 GOFI planning document. The document states that on an average there was 195 tons of particulate matter (dust fall) per square mile per month in the Helwan ambient atmosphere partially due to the Helwan cement plants. The dust pollution greatly exceeds Egyptian standards. The study further suggests that it is reasonable to assume that cement dust makes up a sizable fraction of the total particulate matter, particularly in the vicinity of the plants.
- 19/ After protracted GOFI contract development and source selection procedures the GOFI Board of Directors on April 21, 1986 decided to award contracts under IFB 14/84 to Merscot-ECG. The Board then instructed and authorized the six beneficiary companies to enter into direct contracts with Merscot. One of the beneficiary companies was the Egyptian Sugar & Distillation Company. On 17 July, 1986 the Sugar Company signed the turn-key contract with Merscot and not until April of 1987 did The Sugar Company notify the construction manager that it did not wish the project to continue. The Mission's legal counsel in June, 1988 opined that the contract with the Sugar Company had come into force. We therefore feel the report is accurate.
- 20/ Accepted.
- 21/ Comments 1 through 9 above explain why the paragraph is accurate.
- 22 In-depth feasibility studies were done at 15 companies. See comment 16 above.
- 23/ See comment 19 above.
- 24/ See comments 2 and 6 above.
- 25/ See comment 1 above.

26/ Although the Project Paper and amendments did not quantify the project goal as they should have, the hope was expressed that the EAS would "turn the tide of industrial pollution" in Egypt. The second amendment to the project grant agreement expressed a commitment to reduce the detrimental environmental effect of many industrial firms. Aside from the 46 plants noted in the management comments, we were provided with a 1981 GOFI document that states:

"It is expected that pollution control equipment will be installed in 50 or more factories during the anticipated four years of the GOFI-U.S. project."

27/ See comment 16 above.

28/ Although we are gratified at the progress made since audit fieldwork concluded, see comments 1 and 2 above. However, we have clarified Appendix 2, as needed.

29/ Some equipment was broken during installation.

30/ We agree with the laboratory technicians and the laboratory's managing director that the collection of air samples from smoking chimneys with plastic bags is not a very efficient and practical method of monitoring air pollution. The acquisition of mobile test vans will allow chimney air to be monitored with a probe, while the readings can be taken directly at the monitoring site. This method of pollution monitoring is also less hazardous for laboratory personnel.

STATUS OF INDUSTRIAL POLLUTION
CONTROL SUBPROJECT ACTIVITIES
(FEB 1990)

ORGANIZATION	Task No.	Task Purpose	STATUS
EGYPTIAN STARCH, YEAST AND DETERGENT COMPANY			
1. ESYDC operates a yeast fermentation plant in the Moharrem Bek section of Alexandria. The plant was originally constructed in 1927; employs approximately 500 people; and produces 1,140 tonnes per month of bakers' yeast from the fermentation of sugar cane molasses.	1.	Acquisition of new vacuum filtration and packaging systems which improves production and reduces the loss of product from existing operations.	Not operational: Faulty equipment needs replacement and there is a temporary world-wide shortage of the principal raw material, i.e. a type of potato starch.
	2.	Acquisition of a system that feeds lime to wastewater effluent to neutralize excess acidity.	Not operational: The system is not economical to operate until the lime transport unit is changed. The current design is dependent on the use of a high grade (expensive) lime. Also some faulty control equipment needs replacement.
2. ESYDC operates a manufacturing complex in Siouf, Alexandria, producing rice starch, sodium sulfate, fatty alcohols, and detergent. The detergent plant is continuously operating with a production capacity of 1,000 kg/hr. Primary raw materials used in the detergent plant are elemental sulfur and alkyl benzene. Intermediate products are sulfur dioxide and sulfur trioxide. Sulfonic acid, an intermediate for detergent manufacture, is the primary product.	3.	Installation of an upgraded caustic scrubber and mist eliminator used in the production of sulfonic acid.	Not operational: Additional technical assistance is needed for the initial period of operations.
	4.	Acquisition of improved starch production equipment that increased protein/starch separation efficiency and also reduced the loss of protein into the plant's wastewater discharge.	Not operational: Additional technical assistance is needed for the initial period of operations.

EXTRACTED OILS COMPANY

The Extracted Oils Company operates a manufacturing complex at Moharrem Bek, Alexandria, producing corn oil, ghee (clarified butter), toilet and laundry soaps, and glycerine. The plant expects to increase production capacities by building new ghee and glycerine plants and expanding the existing soap plant.

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| 5. | The task will implement improvements to the tallow melting areas with the installation of a tallow melting separator to reduce the escape of oils and grease. | Not operational: A steam line needs to be installed by the Extracted Oils Company. |
| 6. | Grease trap modifications to reduce escape of oil and grease. | Operational. |
| 7. | Installation of new containerized storage system for filter press cakes and acquisition of dump trucks. | Operational: Chairman stated that the dump trucks were the only useful items that the company had received out of these tasks. |
| 8. | Construction of boiler stack extensions and installation of an oil-spill trap. | Boiler stacks are operating as intended. The oil-spill trap, however, represented the wrong solution to a spill problem. |
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MISR CHEMICAL INDUSTRIES
COMPANY

The plant produces basic inorganic chemicals including caustic soda, chlorine based chemicals, and by-products from limestone and table salt. Chlorine and caustic soda are produced by the electrolysis of salt brine in Zenora mercury cells and Krebs mercury cells.

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| 9. | Installation of an emission control system to control gaseous chlorine and to collect mercury. | Not operational: Faulty control equipment and not all of the mercury traps had been installed. |
| 10. | Acquisition and construction of a mercury removal and recovery system. | GDFI is planning to issue a new IFB for this task. |
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EGYPTIAN LEATHER COMPANY

The Egyptian Leather Company operates a large tanning and leather manufacturing complex in Basateen, Cairo. The tannery processes cow hides, goat skins, and sheep skins with the complex divided into three distinct tanneries: Combined Tannery, Upper Tannery, and Light Tannery. The complex also includes a leather fiberboard manufacturing facility that utilizes waste splits.

11. Enhancements to tannery pretreatment facilities and modifications to sludge settling tanks. Not operating as intended. Was not used for unknown reasons. However, the tasks did not appear to provide quantitative improvements in pollution control over the already existing (normal) sludge setting tanks.
12. Improvements to equalization tank, replacement of pumps, installations of a new lime feed system and a sulfuric acid feed system. Not operational: Additional "debugging" of subsystems is required as well as on-the-job training of employees. The availability and affordability of raw materials (chemicals) needed for the process may be problematic.
13. Acquisition and installation of a chromium removal and recovery system. Task was deleted.
14. Acquisition of glue saking equipment and a steam boiler. Not operational: The boiler is installed and some equipment was delivered. However, additional equipment is needed.

EGYPTIAN SUGAR AND DISTILLATION COMPANY

The Egyptian Sugar and Distillation Company operates a total of eight factories including those at Gus and Kom Oado. The Kom Oado plant processes 9,000-11,000 tonnes of cane per day from mid-December until the end of May. The facility produces sugar, molasses, and fiberboard. The Gus plant processes 8,500-10,000 tonnes of cane per day. It also produces sugar and molasses.

15. This task was designed to transport sludge (brown mud) to the sugar cane fields for disposal. The contract was terminated by the company.
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EL NASR COMPANY FOR FERTILIZERS
AND CHEMICALS (SEMADCO)

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| 1. SEMADCO is the largest manufacturer of nitrogenous fertilizers in Egypt. It operates two plants at Talkha which produce 330,000 tonnes of ammonium nitrate and 570,000 tonnes of urea annually. The plants are located on the Nile River just north of Mansoura and are designated as Talkha I and Talkha II. | 16. | involves the installation of two low-emission ammonium nitrate neutralizers with associated process control systems at Talkha I. | Not operational because some faulty equipment needs replacement. |
| 2. Talkha II. | | Acquisition and installation of new ammonium nitrate neutralizers and related process control systems for the Urea plant (Talkha II) of SEMADCO. | New task is planned. GOFI is planning to issue an IFB for this task. |
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EL TABBIN POLLUTION
CONTROL LABORATORY

The laboratory is located in a building of the El-Tabbin Institute for Metallurgical studies in Helwan.

The building was modified and pollution-monitoring and research equipment valued at \$1 million was installed. The laboratory was established to make surveys of pollution and health problems in various industries.

Not operational: Some mobile test-vans needed to be procured to enable the transport of sensitive monitoring equipment to pollution survey sites. Additional training was needed for some of the more sophisticated research equipment.

APPENDIX 3

Host Country Contributions
(January 1982 - July 1987)

Egyptian Pounds (L.E.)

Office rent and furniture for U.S. contractors in Egypt	473,836
Customs duties for import of cars and project equipment	221,539
Vehicle operating expenses	37,682
Interest expenses	1,284,519
Salaries and per diem for GOFI employees	258,229
Consultation fees for GOFI employees	1,445,000
Contributions by Public Sector Companies	3,500,000
Other	<u>692,437</u>
Total	<u>7,913,241</u>

APPENDIX 4**Report Distribution****No. of Copies**

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