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**Audit of USAID/Philippines'
Technology Transfer for
Energy Management
Project No. 492-0381**

**Audit Report No. 2-492-90-09
August 24, 1990**

**USAID/Philippines did not ensure that the
accomplishments of this energy technology
demonstration project would be replicated.**

UNITED STATES OF AMERICA
AGENCY FOR INTERNATIONAL DEVELOPMENT
REGIONAL INSPECTOR GENERAL/AUDIT
MANILA

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INTERNATIONAL POSTAL ADDRESS
c/o AMERICAN EMBASSY
MANILA, PHILIPPINES

DATE: August 24, 1990

MEMORANDUM

TO: Mr. Malcolm Butler
Director, USAID/Philippines

FROM: 
William C. Montoney
Regional Inspector General

SUBJECT: Audit of USAID/Philippines' Technology Transfer
for Energy Management Project No. 492-0381
Audit Report No. 2-492-90-09

The Office of the Regional Inspector General for Audit/Manila has completed its Audit of USAID/Philippines' Technology Transfer for Energy Management Project. Five copies of the audit report are provided for your action.

The draft report was submitted to you for comment and your comments are attached to the report. The report contains two recommendations. Both are resolved on issuance of the report and can be closed when actions in process are completed.

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

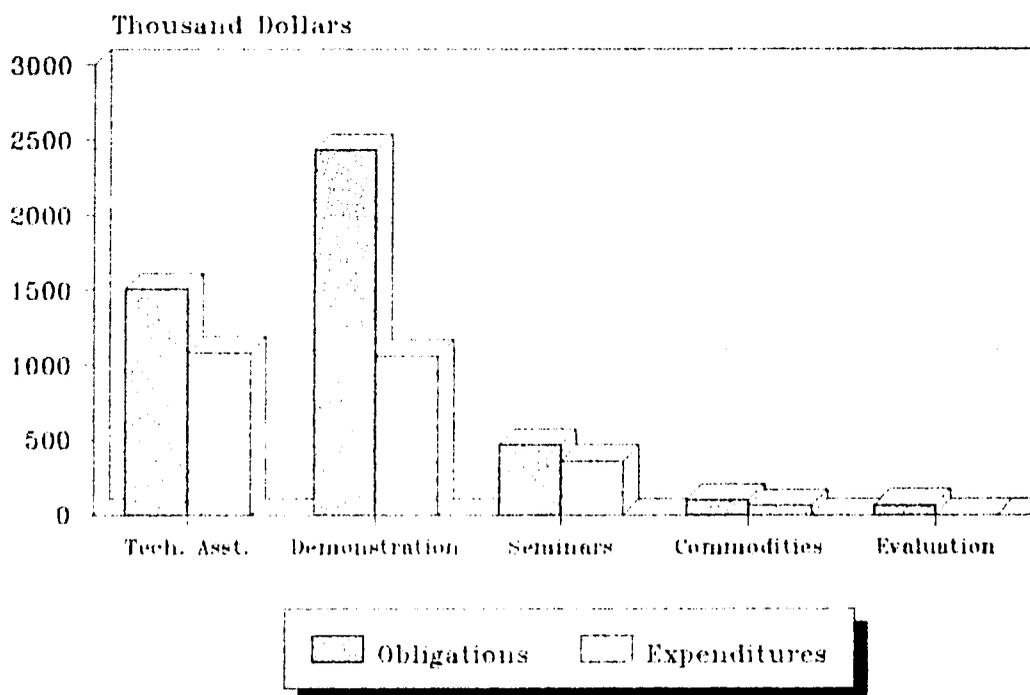
Background

The objectives of the \$7 million Technology Transfer for Energy Management Project (TTEM) were to promote and accelerate the adoption of energy efficient technologies and operational practices by energy consumers in industry and commercial buildings and to establish the institutional capacity of the private sector to manage energy conservation investments and programs. The project was to demonstrate energy conservation technologies which were not widely used in the Philippines. To promote conservation investments, technology demonstrations were to be technically feasible and financially, economically and institutionally viable.

On May 31, 1985, A.I.D. and the Government of the Philippines (GOP) signed a \$5 million project loan and grant agreement. On August 30, 1986, the project agreement was amended converting the loan to a grant. Project implementation delays of over two years were caused by the 1986 change in government, the resultant government reorganization and difficulties encountered in hiring project staff. In February 1990, USAID extended the project assistance completion date from June 30, 1990, to December 31, 1990.

OBLIGATIONS AND EXPENDITURES

As of March 31, 1990



A.I.D. inputs were planned to reach \$4.9 million but were reduced to \$4.575 million in September 1989 because USAID and the GOP agreed that the balance of these resources could not be utilized by project's end. The GOP and the private sector were to provide about \$2.3 million. The GOP was to provide \$732,000, mostly for staff salaries and office facilities, and the private sector's contribution was for cost sharing--not less than 25 percent of each demonstration project--and was to total about \$1.6 million.

A.I.D. funds were to finance:

- a \$2.6 million demonstration loan fund for energy conservation subprojects,
- a technical assistance contractor to assist in project implementation and
- workshops, seminars and studies to disseminate energy conservation technologies.

The GOP's Central Bank administers the demonstration loan fund. Loans were not to exceed \$200,000 and were to support costs of feasibility studies, equipment purchases and installation of equipment. The loans were made through TTEM-accredited participating banks or financial institutions. Borrowers were charged a competitive interest rate.

The GOP's reorganization in 1986 changed the implementing agency from the Bureau of Energy Utilization to the Office of Energy Affairs (OEA). A TTEM Project Office, established within OEA, manages the day-to-day project implementation activities, including administrative support and monitoring. Through an AID-direct contract, the project hired a technical assistance contractor to provide technical, financial and administrative expertise to the project. In addition, the project created a steering committee to provide policy direction and a subproject selection committee to identify energy demonstration subprojects eligible for funding.

Audit Objectives

The Regional Inspector General for Audit/Manila conducted a performance audit of the Technology Transfer for Energy Management Project to answer the following questions:

1. Will the project achieve its objectives?
2. Was a system established to monitor and report the project's progress and to ensure that GOP and private sector contributions were made available for project purposes?

To answer the audit objectives, we tested whether USAID/Philippines (1) followed applicable internal control procedures and (2) complied with certain provisions of laws, regulations, grants and contracts. Our tests were sufficient to provide reasonable--but not absolute--assurance of detecting abuse or illegal acts that could significantly affect the audit objectives. Because of limited time and resources, we did not continue testing when we found that, for the items tested, USAID/Philippines followed A.I.D. procedures and complied with legal requirements. Therefore, we limited our conclusions concerning these positive findings to the items actually tested. When we found problem areas, we performed additional work

- to conclusively determine that USAID/Philippines was not following a procedure or not complying with a legal requirement,
- to identify the cause and effect of the problems and
- to make recommendations to correct the condition and cause of the problems.

Audit Findings

Will the project achieve its objectives?

The results of the audit indicate that the project will not achieve its objectives to promote and accelerate the adoption of efficient energy technologies and operational practices by industrial energy consumers and to establish a strong institutional capacity for the private sector to manage energy conservation-related investments and programs. Activities were accomplished in support of the project objectives including: establishment of a Demonstration Loan Fund, the accreditation of nine financial institutions, approval of 13 demonstration subprojects, and initiation of energy conservation training and promotion activities.

The project will not achieve its objectives because the expected project results are not attainable in the time remaining to complete this project. Also, the status of some objectives could not be verified because baseline data needed to measure project results did not exist and was not developed. The following table compares the expected results at the end of the project, according to the project paper, and their status at the time of audit.

<u>EXPECTED RESULTS</u>	<u>STATUS</u>
Increased numbers of industrial, commercial, and building owners/managers adopt new technologies.	Undeterminable without baseline data, but the project initiated 13 demonstration subprojects.
Increased volume of private sector requests for analytical and technical assistance from local institutes and U.S. consultants.	Undeterminable without baseline data; however, the project financed work by U.S. consultants. No indication of increased requests of local institutions.

Increased private sector energy conservation promotion activities.

No evidence that the private sector has promoted energy conservation.

Increased numbers of loan applications processed for equipment purchases and requests for energy tax incentives.

Loan requests identified were only for the project's loan fund. No increase in requests for energy tax incentives.

Increased formation of local consulting groups to provide energy conservation services.

No indication that there was an increase in the formation of such groups.

There Is No Assurance that Project Activities Will Be Completed or Accomplishments Replicated

A.I.D. policy requires energy programs to be relevant to the country's development priorities in order to sustain them after external assistance ends. It also provides that positive project results should be sustained after A.I.D. assistance ends. Because most of the demonstration subprojects will not be completed and studied until after the project's completion date, the GOP may not continue the project's activities after A.I.D. funding ends. While the GOP has agreed to use the demonstration subprojects for promoting energy conservation technologies, no plans exist for promoting, conducting, or reporting on the studies. The project did not reach the level of outputs expected because energy conservation was not a high priority in the GOP's development plans, A.I.D.'s development assistance for the Philippines or the private sector's investment plans. As a result, A.I.D.'s \$4.5 million investment initiative likely will not be sustained.

Recommendation No. 1: We recommend that USAID/Philippines establish an agreement with the Government of the Philippines for specific actions needed to complete project activities and to sustain the

beneficial results of the project, including assigning responsibilities for monitoring demonstration projects, promoting their results, and reporting to A.I.D.

The A.I.D. policy paper on energy provides that energy programs be relevant to the host country's development priorities so that they may be sustained after external assistance ends. The programs should be tailored to country needs based on factors such as the availability of natural resources, private sector investments and other donor assistance. Section 101(a)(2) of the Foreign Assistance Act states that foreign assistance funding is provided to promote conditions which enable developing countries to achieve self-sustaining growth. A.I.D. Handbook 3 states that, prior to the completion of A.I.D. assistance, a number of continuing responsibilities must be considered, including the adequacy of funding for the continued operation of the project.

The project paper described in broad terms the level of outputs to be achieved by the end of the project. Calculating these expected outputs to reflect the delayed start and comparing to actual achievements, we find that the project has not achieved the intended results.

<u>Category of Outputs</u>	<u>Level of Outputs</u>		
	<u>Planned</u>	<u>Revised 1/</u>	<u>Actual</u>
Demonstrations (completed)	48	29	3
Seminars - one per demonstration or study	80	48	None
Training sessions	70	42	11
Professional exchanges	30 - 40	18 - 24	2
Technology studies	70	42	38
Policy studies	10	6	None

Attendance at workshops/seminars	1600	960	560
Banks adopting new financial mechanisms	Undefined		None
Bankers and donors starting new funding efforts	Undefined		None

1/ Planned levels were reduced by 40 percent to reflect the two-year delay in project activity.

The number of demonstration subprojects was not met. With less than a year before the project ends, only 13 subprojects have been approved and three more are expected to be approved by the end of the project. As of March 1990, \$2,435,000 in A.I.D. funds had been obligated for the demonstration loan fund with \$1,834,000 applicable to 15 subprojects. Funding for one subproject had yet to be determined. USAID/Philippines officials indicated that about \$500,000 would be deobligated.

Despite the project being designed to promote energy conservation investments, some of the approved subprojects would have been developed without the TTEM project. Three of the four subprojects reviewed by us were conceived before the TTEM project began. The oxy-fuel-burner and air conditioning plant linkage subprojects were conceived in 1983. The design and initial purchase of equipment for the heat exchange modification subproject began before the company knew of the TTEM project. Also, the replicability of these subprojects was questioned in the 1987 project evaluation report. The report stated that the air-conditioning plant linkage which joins the air-conditioning systems of two buildings does not appear to be replicable. The report further stated that the oxy-fuel-burner, air-conditioning plant linkage, and heat-exchange modification subprojects were non-TTEM energy conservation technologies.

The project was to develop and demonstrate innovative financing mechanisms for energy conservation. In addition to conventional loans, the project was

to try loans with repayments tied to energy savings, grants or combinations of these. However, all but one of the 13 subprojects used conventional loans. One subproject was financed through a combined conventional loan and grant. Participating banks were reluctant to use innovative financing methods. A bank official said that loans with repayments tied to energy savings are risky.

The project was designed to stimulate additional funding from private financial institutions and international donors. However, energy conservation is not a lending priority of financial institutions. Except for the demonstration loan funds, none of the participating banks made energy conservation loans. Bank officials stated that the current priority in financial markets is for company expansion.

The project failed to achieve project outputs because energy conservation is not a high priority of USAID/Philippines, the GOP or the private sector. USAID/Philippines' strategy for fiscal years 1986 through 1990 did not consider energy conservation to be a development priority for the Philippines. Except in fiscal year 1990, when energy conservation was classified under private sector employment generation, the annual action plans, updating the USAID strategy, did not mention energy conservation or this project.

Despite being one of OEA's institutional mandates, the GOP does not consider energy conservation a high priority. A GOP energy official lamented that energy conservation is emphasized only in times of crisis; it is not a continuing activity.

The private sector does not give energy conservation a high priority either. Some bank officials tried marketing the project by sending letters to 40 of the bank's preferred clients. The results were discouraging--only eight businesses showed interest in the project. Businessmen and bank officials rate energy conservation programs to be one of their lowest priorities. Both USAID/Philippines and GOP officials said that businessmen are more interested in initiating projects to preserve market share than participating in energy conservation projects. In fact, most demonstration subprojects were to increase production capacity with conserving energy as an added benefit.

For instance, the oxy-fuel-burner and heat-exchange modification subprojects were designed primarily to increase production capacity.

The construction of most energy conservation demonstration subprojects will not be complete by December 30, 1990. At the time of the audit, three subprojects were complete. Ten other subprojects were to be completed by December 1990 with three new subproject expected to be approved by that date. However, delays in the construction of these demonstration subprojects may occur. Of the four subprojects reviewed, none were completed within the original time frames. For example, in December 1989, the technical assistance contractor's monthly report indicated that the air-conditioning plant linkage subproject, which was the first demonstration subproject, would be complete by February 1990. The January 1990 report moved back the estimated completion date to April 1990. A company official now estimates that the subproject will be complete in June 1990. Three of the 10 on-going subprojects were initially estimated to be complete in December 1990. Any delay in their construction will put the subprojects beyond the project completion date. Appendix V outlines the original and revised time frames of the 13 approved subprojects. For those completed the table shows that the time to complete the subprojects more than doubled the original estimate.

To demonstrate the energy conservation technologies used in the subprojects, project officials intended to have case studies prepared and to use these to promote the adoption of the technology. Not only are the subprojects not complete, but no plans exist for the individual case studies to be performed. It is unreasonable to believe that case studies can be planned and completed by December 1990. A TTEM project office official said that at least two years of subproject monitoring is needed before a meaningful case study can be developed for each subproject. If true, no case studies will be developed from any of the subprojects by the December 30, 1990, project completion date. Because most demonstration subprojects are not complete, energy conservation technologies will not be demonstrated during the life of the project. Without a commitment from the GOP to complete the case studies after the project ends, the potential benefits of the demonstration subprojects will not be realized.

Besides not having a plan for subproject case studies, the GOP has not identified resources for monitoring the existing subprojects. Further, we doubt that the GOP will continue the project activities after A.I.D. funding ends. The senior project staff, consisting of the project director, two senior project officers and the senior financial officer are paid from A.I.D. funds. The GOP contribution was limited to providing contractual support staff for the TTEM project office. Moreover, the salaries of the AID-financed project staff exceed the GOP salary levels; therefore, these persons could not be hired by the GOP at their present salary levels. OEA has no plans to absorb the AID-funded project staff because there has been no budgetary increase for OEA to pay the salaries of the TTEM project staff.

In January 1990, USAID/Philippines tasked the technical assistance contractor to conduct an institutionalization study of the project. The study was to assess the project's performance and recommend measures for continuing project activities after A.I.D. assistance ends. Essentially, the report shows that little institutionalization had taken place thus far. The study recommended the creation of a foundation to continue the TTEM activities. A GOP official hopes that a World Bank energy sector loan can be used to continue project activities. At present, there exists no mechanism to sustain

Management Comments and Our Evaluation

In a letter to USAID/Philippines, dated May 31, 1990, OEA reiterated its commitment to continue monitoring all subprojects, prepare case studies and conduct seminars on the results of the demonstrated technologies both before and after project completion. A time-phased plan for these activities was to be implemented beginning June 1, 1990, and OEA is working with the Department of Budget and Management for the continued employment of the TTEM junior staff through 1991. OEA is also working on action programs aimed at the continuation of TTEM activities after project completion, including government approval for continuation of project activities, the creation of a permanent revolving development loan fund and the transfer of fund management to the Development Bank of the Philippines. OEA expects

that all subprojects, related case studies and dissemination activities will be completed by December 31, 1991. At that time OEA will provide USAID/Philippines with a final report. This commitment by OEA for the balance of the project and beyond will be formalized in a Joint Project Implementation Letter.

This plan of action is responsive to Recommendation No. 1, which is resolved and can be closed when the Joint Project Implementation Letter is completed and approved.

Was a system established to monitor and report the project's progress and to ensure that GOP and private sector contributions were made available for project purposes?

A system to monitor project activities was not adopted. For the most part, USAID/Philippines monitored project activities through project steering committee meetings and monthly reports of the technical assistance contractor. Without a project monitoring system, USAID was not assured that the GOP and private sector contributions were being made for the project and subprojects, respectively. Also, USAID/Philippines did not require a reporting system on subproject activities. Because monitoring was not done at the subproject level, A.I.D. regulations precluding payment of identifiable taxes and duties from AID-demonstration loan funds may have been violated.

A System for Monitoring Project
Activities Was Not Adopted

A.I.D. Handbook 3, Chapter 11 requires that a project monitoring system be established. Although project bench marks were established during the fourth year of the project, a project monitoring system which tracked progress towards the expected outputs was not adopted. The Project Officer believed that attending project steering committee meetings and reviewing monthly

reports was adequate monitoring. The borrowers agreed to pay 25 percent of their subproject costs, but neither USAID/Philippines nor OEA or its TTEM Project Office knew if this was done. Also, identifiable taxes totaling \$4,000 were paid with A.I.D. funds--contrary to the grant agreement. However, subsequent to the audit, the TTEM Project Office provided USAID/Philippines documents showing that the company had spent more than \$4,000 for other eligible costs which would offset the funds spent for taxes. USAID/Philippines had not required OEA to review borrower activities and attest that the terms and conditions of the agreements were met and that A.I.D. regulations were complied with.

Recommendation No. 2: We recommend that USAID/Philippines:

- 2.1 require the Office of Energy Affairs to attest that the host-country contribution of \$732,000 was provided and that private companies contributed at least 25 percent of the cost of their demonstration subprojects and**
- 2.2 review the Office of Energy Affairs' attestations to ensure that project funds were not used for unallowable costs, i.e. identifiable taxes and duties, and recover any unallowable costs.**

A.I.D. Handbook 3, Chapter 11 requires that a project monitoring system be established. The monitoring system must ensure the timely gathering of information about inputs, outputs, and actions to assure that A.I.D. funds are disbursed in accordance with statutory requirements. For example, a monitoring system should identify problems that cause delays in project implementation. These problems can be identified through periodic site visits, monitoring reports, and discussions with project participants.

In June 1989, after the project continued incurring implementation delays, USAID/Philippines required the TTEM Project Office to establish annual project bench marks. Although the TTEM Project Office established these bench marks, USAID/Philippines did not adopt a monitoring system to determine whether these bench marks were achieved or whether A.I.D. rules

and regulations were complied with. For project monitoring, USAID/Philippines project officials relied on the quarterly project steering committee meetings and the monthly reports of the technical assistance contractor. While steering committee meetings were reliable sources of information, generally only policy matters were discussed. As a result, problems encountered during project implementation were given little attention.

Although project activities emphasized the completion of the demonstration subprojects, USAID/Philippines did not institute a monitoring plan for subprojects. Of the 13 approved subprojects, USAID/Philippines project officials had visited only two sites; site visit reports were not prepared to document these visits. At the subprojects visited by USAID/Philippines officials, and subsequently by us, companies were not separately tracking subproject costs. USAID/Philippines project officials who had visited these sites were not aware of this. During our visit, company officials agreed to set up separate accounting for these subprojects.

While the technical assistance contractor submitted monthly reports, USAID/Philippines project officials did not have a plan for using this information for project monitoring. The monthly reports provided general information about project activities. In December 1989, the USAID/Philippines Project Officer asked the contractor to begin providing more specific data, such as the status of subprojects, technical assistance provided, and activities planned for the next period. However, these reports did not provide information on borrower contributions to subprojects or the causes of subproject delays. The report file bears little evidence that USAID/Philippines project officials analyzed these reports or followed-up on identified problems.

The project paper envisioned that the TTEM Project Office would do most of the project monitoring. This did not occur. For example, monitoring plans for demonstration subprojects were not developed. For the four subprojects included in our review, site visits, trip reports, or status reports were not prepared. TTEM project staff said that subproject monitoring was not regularly conducted. Instead, site visits were done at the request of the

borrower and covered only the technical aspects of the subproject. Monitoring of demonstration loan disbursements for compliance with regulations and the loan agreement was not done. While the loan agreement between the participating bank and the borrower requires participating banks to adopt measures to ensure that the loans are used for intended purposes, the requirement was not complied with. Participating banks did not adopt systems to ensure that loan disbursements were in accordance with their agreements. Bank officials that we interviewed acknowledged having failed to monitor loan disbursements. Also, TTEM project officials had not monitored the banks to ensure compliance with the agreements.

Neither USAID/Philippines nor the TTEM Project Office provided effective monitoring for this project. However, since project completion is imminent, no useful purpose would be served by the establishment of a monitoring system at this time.

Host Country Contributions

Section 110 of the Foreign Assistance Act of 1961 requires the host country to provide at least 25 percent of the total project cost. The project agreement required the GOP to provide \$732,000 for staff support and facilities and the private sector to provide 25 percent of the cost of the demonstration subprojects--about \$1.6 million.

Because of the absence of a project monitoring system, USAID/Philippines did not know whether the GOP contribution of \$732,000 had been provided. In addition, the 25 percent contribution of the private sector in the demonstration projects cannot be determined. Separate accounting for the four subprojects reviewed by us did not exist. Although each company had agreed to provide 25 percent of its subproject's cost, neither the TTEM project office nor USAID/Philippines had records showing that these companies had done so.

For example, the original proposal for one company's subproject identified its 25 percent contribution as mostly payments of taxes and duties. However,

company officials assured us that the company availed itself of the Board of Investment's tax incentives. The company's latest financial report indicated that about \$233,000 had been spent on its subproject. The project financed about 84 percent of the subproject's cost, or \$197,000. Consequently, the company provided only 16 percent of the subproject's costs, or \$36,000. The company's 25 percent share should have been about \$58,000. Company and USAID officials stated that the project was not complete; therefore, the company could still make up the shortfall in its contribution. Since the company did not maintain separate subproject accounts, we could not determine if it had incurred any other eligible costs.

For another subproject, the company's contribution consisted of the cost of design work, which was performed before the subproject was presented for TTEM financing. The payment made prior to the AID-financed loan amounted to 25 percent of the companies proposed cost for the subproject. In reviewing the financial report provided by the company, we identified taxes paid from the A.I.D. loan amounting to about \$4,000. Subsequent to the audit, the TTEM Project Office submitted an attestation and documents showing that the company had expended more than \$4,000 for lumber and other building materials which would offset the amount paid for taxes. USAID/Philippines planned to review this subproject to confirm the TTEM Project Office's attestation.

Management Comments and our Evaluation

USAID/Philippines is reviewing the financial records of OEA's host-country contribution and the private companies' counterpart funding for completed subprojects. Also, OEA has provided company records showing that A.I.D. funds were not used for identifiable taxes. USAID/Philippines will review and confirm the financial documents submitted by OEA. OEA's post-TTEM final report will include a financial report of host-country and participating private company counterpart funding for the subprojects. This reporting requirement will be formalized through a Joint Project Implementation Letter.

This plan of action and the actions in process are responsive to

Recommendation No. 2, which is resolved. The recommendation can be closed when the actions in process have been completed and when the Joint Project Implementation Letter is completed and approved.

SCOPE AND METHODOLOGY

Scope

We audited USAID/Philippines' Technology Transfer for Energy Management (TTEM) Project in accordance with generally accepted government auditing standards. We conducted the audit during the period January through April 1990 and tested disbursements of about \$980,000, or 38 percent of total project expenditures as of March 31, 1990.

We conducted our field work at USAID/Philippines, the Government of the Philippines' Office of Energy Affairs, the TTEM Project Office and demonstration loan fund borrowers. We selected and reviewed four of the 13 approved demonstration subprojects and visited the sites of three of these subprojects.

Methodology

To determine the status of the project, we reviewed progress reports of USAID/Philippines and the technical assistance contractor, the 1988 project evaluation report, the 1990 institutionalization study, annual work plans and quarterly reports to the steering committee. To update the project status, we interviewed project officials from USAID/Philippines, the Philippine Government and the private sector. We relied on interviews with officials from USAID/Philippines, the TTEM project office, and the technical assistance contractor to assess the project monitoring system.

To determine the adequacy of internal controls, we reviewed the project

financial plan, project implementation letters, the technical assistance contract, and payment vouchers for the technical assistance contractor.

REPORT ON INTERNAL CONTROLS

We have audited USAID/Philippines' Technology Transfer for Energy Management Project and have issued our report dated August 24, 1990.

We conducted our audit in accordance with generally accepted government auditing standards, which require that we plan and perform the audit to fairly, objectively, and reliably answer the objectives of the audit. Those standards also require that we:

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

In planning and performing our audit, we considered A.I.D.'s internal control structure to determine our auditing procedures in order to answer the audit objective and not to provide assurance on the internal control structure.

The management of A.I.D., including USAID/Philippines, is responsible for establishing and maintaining adequate internal controls. Recognizing the need to reemphasize the importance of internal controls in the Federal Government, Congress enacted the Federal Manager's Financial Integrity Act (the Integrity Act) in September 1982. This Act, which amends the Accounting and Auditing Act of 1950, makes the heads of executive agencies and other managers as delegated legally responsible for establishing and maintaining adequate internal controls. Also, the General Accounting Office has issued "Standards for Internal Controls in the Federal Government" to be

used by agencies in establishing and maintaining such controls.

In response to the Integrity Act, the Office of Management and Budget has issued guidelines for the "Evaluation and Improvement of Reporting on Internal Control Systems in the Federal Government." According to these guidelines, management is required to assess the expected benefits versus related costs of internal control policies and procedures. The objectives of internal control policies and procedures for federal foreign assistance programs are to provide management with reasonable--but not absolute--assurance that resource use is consistent with laws, regulations, and policies; resources are safeguarded against waste, loss, and misuse; and reliable data is obtained, maintained, and fairly disclosed in reports. Because of inherent limitations in any internal control structure, errors or irregularities may occur and not be detected. Moreover, predicting whether a system will work in the future is risky because (1) changes in conditions may require additional procedures or (2) the effectiveness of the design and operation of policies and procedures may deteriorate.

For purposes of this report, we have classified significant internal control policies and procedures applicable to the audit objective. We obtained an understanding of the design of relevant policies and procedures and determined whether they have been placed in operation--and we assessed control risk. In doing this work, we found certain problems that we consider reportable under standards established by the Comptroller General of the United States. Reportable conditions are those relating to significant deficiencies in the design or operation of the internal control structure which we become aware of and which, in our judgment, could adversely affect USAID/Philippines' ability to assure that resource use is consistent with laws, regulations, and policies; resources are safeguarded against waste, loss, and misuse; and reliable data is obtained, maintained, and fairly disclosed in reports.

Audit Objective One

The first objective was to determine the status of the project in achieving its

objectives and to identify the extent that outputs would be achieved and project results would be sustained beyond project completion. We considered the provisions of the project agreement, guidance provided in A.I.D. Handbook 3 and A.I.D.'s policy paper on energy. We noted the following reportable condition:

- Although the project was almost complete, project objectives had not been accomplished, outputs were significantly less than planned and no plan existed to ensure that the beneficial results of the project were sustained beyond project completion.

Audit Objective Two

The second objective relates to USAID/Philippines' oversight of project activities. In performing our work we considered the relevant internal control policies and procedures cited in A.I.D. Handbook 3. We noted the following reportable condition:

- Neither USAID/Philippines nor the host-government implementing agency provided effective monitoring for this project.

• • •

A material weakness is a reportable condition in which the design or operation of the specified internal control elements does not reduce to a relatively low level the risk that errors or irregularities in amounts that would be material in relation to the financial reports on projects funds being audited may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions.

Our consideration of internal controls would not necessarily disclose all matters that might be reportable conditions and, accordingly, would not necessarily disclose all reportable conditions that are also considered to be material weaknesses as defined above. However, we believe the reportable conditions described under audit objectives one and two are material weaknesses.

REPORT ON COMPLIANCE

We have audited USAID/Philippines' Technology Transfer for Energy Management Project for the period May 31, 1985 through March 31, 1990, and have issued our report dated August 24, 1990.

We conducted our audit in accordance with generally accepted government auditing standards, which require that we plan and perform the audit to fairly, objectively, and reliably answer the audit objectives. Those standards also require that we:

- assess compliance with applicable requirements of laws and regulations when necessary to satisfy the audit objectives (which includes designing the audit to provide reasonable assurance of detecting abuse or illegal acts that could significantly affect the audit objectives) and
- report all significant instances of noncompliance and abuse and all indications or instances of illegal acts that could result in criminal prosecution that were found during or in connection with the audit.

Noncompliance is a failure to follow requirements, or a violation of prohibitions, contained in statutes, regulations, contracts, grants and binding policies and procedures governing entity conduct. Noncompliance constitutes an illegal act when the source of the requirement not followed or prohibition violated is a statute or implementing regulation. Noncompliance with internal control policies and procedures in the A.I.D. Handbooks generally does not fit into this definition and is included in our report on internal controls.

Abuse is furnishing excessive services to beneficiaries or performing what may be considered improper practices, which do not involve compliance with laws and regulations.

Compliance with laws, regulations, contracts, and grants applicable to the project is the overall responsibility of USAID/Philippines. As part of fairly, objectively, and reliably answering the audit objectives, we performed tests of USAID/Philippines, technical assistance contractor, host-country, and private sector compliance with certain provisions of Federal laws and regulations, contracts and grants. However, our objective was not to provide an opinion on overall compliance with such provisions.

The results of our tests of compliance disclosed the following significant instance of noncompliance:

- USAID/Philippines did not ensure that host-country contributions of \$732,000 and private sector contributions of about \$1.6 million were provided as required by the Foreign Assistance Act and the project agreement.

Except as described, the results of our tests of compliance indicate that, with respect to the items tested, USAID/Philippines, the technical assistance contractor, the Government of the Philippines, and the private sector complied, in all significant respects, with the provisions referred to in the fourth paragraph of this report. With respect to items not tested, nothing came to our attention that caused us to believe that USAID/Philippines, the technical assistance contractor, the Government of the Philippines and the private sector had not complied, in all significant respects, with those provisions.

Length of Construction Periods for TTEM Demonstrations

<u>Demonstration</u>	<u>TTEM Loan</u>	<u>Planned Start</u>	<u>Planned Completion</u>	<u>Actual Start</u>	<u>Estimated Completion</u>	<u>Length of Construction</u>	
						<u>Planned</u>	<u>Actual</u>
Power Factor Correction/Capacitors	\$ 24,697	Aug 1988	Nov 1988	May 1989	Jun 1990		
Power Factor Correction/ Electric Motors	24,222	Oct 1988	Dec 1988	Jan 1989	Nov 1989*	2 months	10 months
Air Conditioning Plant Linkage	199,478	Jul 1988	Aug 1988	May 1989	Jun 1990		
Heat Exchange Modification	202,802	Oct 1988	Jan 1989	Dec 1988	Sept 1989*	3 months	9 months
Technical Loss Reduction	196,765	Apr 1989	Oct 1989	Apr 1990	Dec 1990		
Oxy-fuel Burner System	196,765	Apr 1989	Jun 1989	Jul 1989	Mar 1990*	2 months	8 months
Improved Steam Distribution	79,226	May 1989	Dec 1989	Oct 1989	Mar 1990		

*Actual

25

<u>Demonstration</u>	<u>TTEM Loan</u>	<u>Planned Start</u>	<u>Planned Completion</u>	<u>Actual Start</u>	<u>Estimated Completion</u>	<u>Length of Construction</u>	
						<u>Planned</u>	<u>Actual</u>
Cogeneration	\$190,909	Jan 1990	Mar 1990	Nov 1989	Jul 1990		
High Efficiency Motors	31,818	Oct 1989	Dec 1989	Nov 1989	Dec 1990		
Boiler Load Optimization	136,364	Dec 1989	Mar 1990	Apr 1990	Sept 1990		
Heat Recovery/ Combustion Control	145,455	Aug 1989	Dec 1989	Jul 1990	Oct 1990		
Heat Recovery/Engine Exhaust	38,636	Dec 1989	Sept 1989	Apr 1990	Aug 1990		
Combustion Controls		Loan Approval - In Process				Dec 1990	

*Actual

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UNITED STATES GOVERNMENT

Memorandum

APPENDIX V

TO : William C. Montoney
Regional Inspector General, RIG/A/M

FROM : Malcolm Butler, Director *MuB*
USAID/Philippines

SUBJECT : Draft Report: Audit of USAID/Philippines
Technology Transfer for Energy Management (TTEM)
Project No.: 492-0381

DATE: AUG 22 1990

We have reviewed the subject draft report and generally concur with the conclusions and recommendations contained in the report. The Mission has taken or is taking the actions described below in order to close the two open recommendations of the report.

RIG/A Recommendation No. 1:

It is recommended that USAID/Philippines establish an agreement with the Government of the Philippines for specific actions needed to complete project activities and sustain the beneficial results of the project, including assigning responsibilities for monitoring demonstration projects, promoting their results, and reporting to A.I.D.

USAID Action

In a letter to the Mission dated May 31, 1990 the Office of Energy Affairs (OEA) has reiterated its commitment to continue monitoring all subprojects, prepare case studies and conduct seminars on the results of the demonstrated technologies both before and after the Project Assistance Completion Date (PACD). The OEA has prepared a time-phased plan (Attachment A) starting June 1, 1990, which includes monitoring, documentation and information dissemination activities for all of the Demonstration Loan Fund (DLF) subprojects.

Based on OEA's work program, 17 DLF subprojects are planned to be completed by the PACD. Out of the 17 DLF subprojects, 3 case studies are expected to be completed by the PACD. The 3 subprojects are: a) power factor correction - Central Azucarera de Don Pedro (CADP); b) waste heat recovery - Republic Cement Corporation (RCC); and c) Oxy-fuel burner - Amico Marsteel Corporation (ARMCO).

It is planned that the staff of the OEA Conservation Division will be responsible for monitoring the 17 subprojects, preparation of subproject case studies, and dissemination of results. OEA is currently working

with the Department of Budget and Management on a 1991 budget request for the continued employment of the TTEM Project junior staff. About 12 of the existing TTEM staff are funded from the OEA budget. OEA is also currently working on various action programs which are aimed at the continuation of the TTEM project activities after the PACD as recommended in the Institutionalization Study. These activities (outlined in the work program) include Philippine government approval of the continuation of the TTEM project activities, the creation of a permanent revolving fund for the DLF and the transfer of the fund management to the Development Bank of the Philippines.

By the end of December 1991, it is expected that the staff of the OEA Conservation Division will complete the case studies and dissemination activities for all 17 DLF subprojects. OEA will be required to provide AID with a final report of completed activities at that time.

Based on the aforementioned commitment of OEA as reflected in the work plan, we expect to close this recommendation by issuing a Joint Project Implementation Letter (JPIL) to formalize the post-TTEM plans for the 17 DLF projects.

Therefore, based on the above, we recommend that the recommendation no. 1 be considered resolved upon issuance of the final audit report.

RIG/A Recommendation No. 2: It is recommended that USAID/Philippines:

- 2.1 require OEA to attest that the host country contribution of \$732,000 was provided and that private companies contributed at least 25% of the cost of their demonstration subprojects;
- 2.2 review OEA attestations to ensure that project funds were not used for unallowable costs, i.e., identifiable taxes and duties; and
- 2.3 recover any unallowable costs.

USAID ACTION

The Mission is currently reviewing the financial records of OEA's host country contribution and the private companies' counterpart funding for completed DLF subprojects. Also, OEA has provided to the Mission the financial records of Republic Cement Corporation (RCC) project which is funded under the DLF. The financial records for the RCC project (Attachment B) show that AID funds were not used for any identifiable taxes and duties.

The Mission's Office of Financial Management is to review and confirm the financial documents submitted by OEA. OEA's post-TTEM final report will include a final financial report of host country and participating private company counterpart funding for the 17 DLF projects. This report requirement will also be formalized through a JPIL.

Based on the above, we recommend that recommendation number 2.1, 2.2 and 2.3 be considered resolved upon issuance of the final audit report .

OTHER COMMENTS

With the close-out of the AID funding, OEA is prepared to commit itself to completion of the planned activities for the 17 DLF projects. Efforts beyond this towards the institutionalization and ultimate success of the TTEM concept will remain to be seen after the PACD, as envisioned and stated in the Project Paper (PP). It is planned that OEA's final report of the project (expected on or after December, 1991), will reflect the status of institutionalization and progress on energy conservation implementation.

Attachment: a/s

cc: Mr. Robert Henrich, ENE/DP/F
IG/PPO, AID/W



REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT
OFFICE OF ENERGY AFFAIRS

31 May 1990

Mr. Robert Jordan
Chief, Office of Capital Projects
UNITED STATES AGENCY FOR INTERNATIONAL
DEVELOPMENT (USAID)
Ramon Magsaysay Center
Roxas Boulevard, Ermita
Manila

**SUBJECT : Technology Transfer for Energy
Management (TTEM) Project
AID Proj. No. 492-0381**

Dear Mr. Jordan :

In response to your letter of April 27, 1990, the Office of Energy Affairs reiterates its commitment to pursue the institutionalization of the TTEM Project as recommended by the study consultants. With this institutionalization objective, OEA staff have formulated the necessary action plans and have scheduled the necessary activities. OEA is pursuing the immediate institutionalization and the expanded institutionalization at the same time.

We are now in the process of securing the necessary government approvals on the continuation of the project, the creation of a permanent revolving fund for the Demonstration Loan Fund and the transfer of the fund management to DBP. To support post-PACD TTEM activities, we are including in our 1991 OEA budget request the necessary administrative costs as well as staff requirements.

Attached is a time-phased implementation plan for the rest of 1990 and post-PACD monitoring, documentation and information dissemination activities for each DLF subproject.

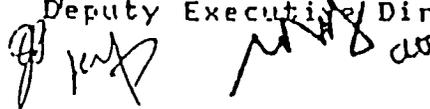
We also take this opportunity to request that OEA be given the chance to fully utilize the DLF component until December, 1990. We still have some pipeline projects which can readily meet the requirement that the project be operational before PACD. We have made sure that only projects meeting this deadline are evaluated and approved and two DLF applications have been rejected because of this condition. As earnings on the corpus of the DLF is one option of funding post-PACD TTEM activities, we are exerting our best efforts towards full utilization, for the permanent fund to start with a bigger base. Ongoing negotiations with other prospective funders such as World Bank and Federal Republic of Germany indicate these sources may not be ready for tapping by end-1990. Attached is our updated program for the utilization of the DLF.

It is our hope that we have clarified our position on the issues you have raised and we look forward to your usual cooperation as we undertake the programmed activities of the TTEM Project including its institutionalization.

Very truly yours,



BEN-HUR C. SALCEDO
Deputy Executive Director





**TECHNOLOGY TRANSFER FOR ENERGY MANAGEMENT
(TTEM) Project
UPDATED 1990 WORK PROGRAM**

ACTIVITIES	JUNE				JULY				AUG				SEPT				OCT				NOV				DEC							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
A. DLF																																
1. Evaluate Projects																																
2. Disburse Projects																																
a. Bell																																
b. Iligan																																
c. TIPCO																																
d. Alsons-1																																
e. Alsons-2																																
3. Financial Report																																
B. TECHNICAL																																
1. Technical Assistance																																
2. Project Monitoring																																
3. PLDT Study																																
C. INFORMATION DISSEMINATION																																
1. TTEM Channel																																
2. Project Case Reports																																
3. Seminar on DLF Project Results																																
4. Final Report																																
5. Press Releases																																
D. INSTITUTIONAL																																
1. Staff Training																																
2. INSTITUTIONALIZATION																																
a. Get Approval of President																																
b. Transfer Trusteeship to DBP																																
c. Create revolving fund																																
d. Advise CB of fund transfer																																
e. Request budget for post-PACD																																
f. Define organizational structure																																
g. Develop procedures manual/ coordination framework																																
h. Negotiate with other funders																																

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Schedule Name : TTEM MASTER PLAN
 Responsible : RMA RESIDENT CONSULTANT
 As-of Date : 15-May-90 9:00am

Schedule Name : TTEM MASTER PLAN
 Responsible : RMA RESIDENT CONSULTANT
 As-of Date : 15-May-90 9:00am Schedule File : C:\TL3\DATA\TTEMPLA
 As-of Date : 15-May-90 9:00am Schedule File : C:\TL3\DATA\TTEMPLA

Task Name	Start Date	End Date	90				9091				92							
			Jan 2	Mar 1	May 1	Jul 2	Sep 4	Nov 1	Dec 3	Feb 1	Apr 1	Jun 3	Aug 1	Oct 1	Nov 1	Jan 2	Mar 2	May 1
DEMO LOAN FUND	2-Feb-87	28-Dec-90	#####															
EVALUATE PROJECTS	2-Feb-87	30-Jul-90	XXXXXXXXXXXXXX															
DISBURSE PROJECTS	15-Jun-90	30-Aug-90			#####													
BELL CARPTS	16-Jul-90	16-Jul-90			.M													
ILIGAN L&P	15-Jun-90	15-Jun-90			M.													
TIPCO	2-Jul-90	2-Jul-90			M													
ALSONS I	16-Jul-90	16-Jul-90			.M													
ALSONS II	16-Jul-90	16-Jul-90			.M													
FINANCIAL RPT	2-Jul-90	28-Dec-90				XXXXXXXXXXXXXX												
TECHNICAL SUPPORT	2-Feb-87	31-Oct-90	#####															
TECH ASSISTANCE	2-Feb-87	31-Oct-90	XXXXXXXXXXXXXXXXXXXXXX															
PLDT STUDY	16-Apr-90	31-Oct-90			XXXXXXXXXXXXXXXXXXXX													
INFORMATION DISSEM	4-Jan-88	31-Dec-90	#####															
TTEM CHANNEL	16-Jul-90	16-Jul-90			.M													
TTEM CHANNEL	15-Oct-90	15-Oct-90				M												
FINAL REPORT	1-Oct-90	14-Dec-90				.XXXXXX												
PRESS RELEASES	4-Jan-88	31-Dec-90	XXXXXXXXXXXXXXXXXXXXXX															
INSTITUTIONAL	2-Jan-90	31-Dec-90	#####															
STAFF TRAINING	2-Jan-90	31-Jul-90	XXXXXXXXXXXXXXXXXXXX															
INSTITUTIONALIZATION	1-Jun-90	31-Dec-90			#####													
PRES APPRVL	16-Jul-90	16-Jul-90			.M													
TSF TRUST TO DBP	15-Jun-90	31-Jul-90			XXXX													
CREATE REV FUND	1-Jun-90	30-Nov-90			XXXXXXXXXXXXXXXXXXXX													
ADVISE CB FND TSF	15-Aug-90	15-Aug-90			X													
POST-PACD BUD RQS	4-Jun-90	16-Aug-90			XXXXXX													
DEF ORG STRUCT	1-Aug-90	30-Aug-90			XXX.													
PROCEDURES MANUAL	1-Oct-90	30-Nov-90				.XXXXXX												
NEG OTHER FUNDERS.	1-Jun-90	31-Dec-90			XXXXXXXXXXXXXXXXXXXX													
DLF PROJ MONITORING	3-Nov-89	16-Jan-92	#####															
BENGUET I	31-Jul-90	19-Aug-91			#####													
PROJ COMP	31-Jul-90	31-Jul-90			M													
MONITORING	31-Jul-90	11-Feb-91			XXXXXXXXXX	XXXXXX												
CASE STUDY	11-Feb-91	15-May-91								XXXXXXXXXX								
INFO DISSEM	15-May-91	19-Aug-91								XXXXXXX								
CADP	1-Mar-90	20-Mar-91	#####															
PROJ COMP	1-Mar-90	1-Mar-90	m															

 XXXXX Detail Task ##### Summary Task M Milestone XXXXX Detail Task ##### Summary Task M Milestone
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Task Name	Start Date	End Date	90		9091							92							
			Jan	Mar	May	Jul	Sep	Nov	Dec	Feb	Apr	Jun	Aug	Oct	Nov	Jan	Mar	May	Jul
			2	1	1	2	4	1	3	1	1	3	1	1	1	2	2	1	1
MONITORING	1-Mar-90	6-Sep-90			XXXXXXXXXXXXXXXX														
CASE STUDY	6-Sep-90	12-Dec-90					XXXXXX X												
INFO DISSEM	12-Dec-90	20-Mar-91						XXXXXXXXX.											
FLDT	17-Sep-90	3-Oct-91					#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	
PROJ COMP	17-Sep-90	17-Sep-90					M												
MONITORING	17-Sep-90	28-Mar-91						XXXXXX XXXXXXXXX.											
CASE STUDY	29-Mar-91	1-Jul-91								XXXXXXX									
INFO DISSEM	2-Jul-91	3-Oct-91									XXXXXXX								
REP CEMENT	3-Nov-89	28-Dec-90					#####	#####	#####	#####									
PROJ COMP	3-Nov-89	3-Nov-89																	
MONITORING	3-Nov-89	16-May-90					XXXXXXXXXX												
CASE STUDY	19-Jun-90	21-Sep-90						XXXXXXXXXX											
INFO DISSEM	21-Sep-90	28-Dec-90							XXXXX XX										
CEPALCO	2-Jul-90	19-Jul-91						#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	
PROJ COMP	2-Jul-90	2-Jul-90						M											
MONITORING	2-Jul-90	10-Jan-91						XXXXXXXXXXXX	XXX										
CASE STUDY	11-Jan-91	16-Apr-91								XXXXXXXXX									
INFO DISSEM	17-Apr-91	19-Jul-91									XXXXXXXXX.								
ARMCO-MARSTEEL	12-Mar-90	29-Mar-91						#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	
PROJ COMP	12-Mar-90	12-Mar-90						M											
MONITORING	12-Mar-90	17-Sep-90						XXXXXXXXXXXX											
CASE STUDY	17-Sep-90	21-Dec-90							XXXXXX XX										
INFO DISSEM	21-Dec-90	29-Mar-91								XXXXXXX									
ARAS-ASAN	15-Jun-90	9-Jul-91								#####	#####	#####	#####	#####	#####	#####	#####	#####	
PROJ COMP	15-Jun-90	15-Jun-90						M											
MONITORING	19-Jun-90	28-Dec-90						XXXXXXXXXXXX	XX										
CASE STUDY	28-Dec-90	4-Apr-91								XXXXXXX									
INFO DISSEM	4-Apr-91	9-Jul-91									XXXXXXXXX.								
CENTRAL FERM	1-Jun-90	9-Jul-91								#####	#####	#####	#####	#####	#####	#####	#####	#####	
PROJ COMP	1-Jun-90	1-Jun-90						M											
MONITORING	19-Jun-90	28-Dec-90						XXXXXXXXXXXX	XX										
CASE STUDY	28-Dec-90	4-Apr-91								XXXXXXX									
INFO DISSEM	4-Apr-91	9-Jul-91									XXXXXXXXX.								
BENQUET II	15-Jun-90	9-Jul-91								#####	#####	#####	#####	#####	#####	#####	#####	#####	
PROJ CCMP	15-Jun-90	15-Jun-90						M											
MONITORING	19-Jun-90	28-Dec-90							XXXXXXXXXXXX	XX									

 XXXXX Detail Task ##### Summary Task M Milestone
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Task Name	Start Date	End Date	9091												92				
			Jan 2	Mar 1	May 1	Jul 2	Sep 4	Nov 1	Dec 3	Feb 1	Apr 1	Jun 3	Aug 1	Oct 1	Nov 1	Jan 2	Mar 2	May 1	Jul 1
CASE STUDY	28-Dec-90	4-Apr-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
INFO DISSEM	4-Apr-91	9-Jul-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
RUBBERWORLD	2-Jul-90	19-Jul-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PROJ COMP	2-Jul-90	2-Jul-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
MONITORING	2-Jul-90	10-Jan-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CASE STUDY	11-Jan-91	16-Apr-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
INFO DISSEM	17-Apr-91	19-Jul-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
UNION GLASS CC	25-Sep-90	14-Oct-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PROJ COMP	25-Sep-90	25-Sep-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
MONITORING	25-Sep-90	8-Apr-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CASE STUDY	8-Apr-91	11-Jul-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
INFO DISSEM	11-Jul-91	14-Oct-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BELL CARPETS	27-Aug-90	13-Sep-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PROJ COMP	27-Aug-90	27-Aug-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
MONITORING	27-Aug-90	8-Mar-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CASE STUDY	11-Mar-91	11-Jun-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
INFO DISSEM	12-Jun-91	13-Sep-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BACNOTAN	30-Oct-90	15-Nov-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PROJ COMP	30-Oct-90	30-Oct-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
MONITORING	30-Oct-90	9-May-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CASE STUDY	10-May-91	13-Aug-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
INFO DISSEM	14-Aug-91	15-Nov-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ILIGAN L&P	24-Dec-90	10-Jan-92	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PROJ COMP	24-Dec-90	24-Dec-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
MONITORING	24-Dec-90	2-Jul-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CASE STUDY	3-Jul-91	4-Oct-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
INFO DISSEM	7-Oct-91	10-Jan-92	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TRUST INTERNATIONAL	31-Dec-90	16-Jan-92	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PROJ COMP	31-Dec-90	31-Dec-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
MONITORING	31-Dec-90	9-Jul-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CASE STUDY	10-Jul-91	10-Oct-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
INFO DISSEM	11-Oct-91	16-Jan-92	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ALSONS I	31-Dec-90	16-Jan-92	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PROJ COMP	31-Dec-90	31-Dec-90
MONITORING	31-Dec-90	9-Jul-91
CASE STUDY	10-Jul-91	10-Oct-91

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<XXX Detail Task   ##### Summary Task   M Milestone   XXXXX Detail Task   ##### Summary Task   M Milestone
xxx (Started)     ==### (Started)     >>> Conflict   xxXXX (Started)     ==### (Started)     >>> Conflict
xX-- (Slack)      ##N-- (Slack)       ..XXX Resource delay   XXX-- (Slack)      ##N-- (Slack)       ..XXX Resource delay
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Scale: 2 weeks per character
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INFORMATION DISSEMINATION

Purpose

The purpose of Information Dissemination covers three areas:

1. DLF Subprojects - The results of the TTEM DLF Subprojects need to be communicated to the enercon community (GOP, private, and institutional sectors) so that other potential users of this technology are informed of its potential.
2. Institutionalized TTEM - The enercon community also needs to be aware of the services OEA will continue to provide under an institutionalized TTEM program.
3. Technologies - Information on TTEM technologies will continue to be promoted.

Methodology

Information dissemination is accomplished in many ways. Some methods are more applicable to one type of information than another. The program also needs to be flexible so that opportunities for information dissemination can be utilized as they arise. The principal methods that will be employed are the following:

1. Seminars - Seminars are a useful way to reach many interested parties in a concise fashion. Seminars are planned to be conducted for each technology and subproject. Some may be combined into a package of topics, others may be individually presented. e.g. A seminar on enercon technology for commercial buildings could include: energy management systems, waste heat recovery technology, combustion control, and insulation. Or, a seminar specifically on one technology could include several case study presentations.
2. Case Studies - Case studies will be prepared for each completed subproject. The study can be distributed through the enercon community, or by a direct marketing approach to likely candidates.
3. Guest Speakers - OEA can participate in seminars, vendor training programs, institutional courses, etc. sponsored by other organizations, on related TTEM topics. e.g. OEA could present a technology and case study at a UP sponsored seminar on waste heat recovery technology.
4. Marketing - Through the ongoing marketing of the TTEM program, the program itself, technologies, and case studies will be communicated throughout the country.

All of these methods will be employed as judged to be the most effective method of information dissemination.

FINAL REPORT

DEA will prepare a final report, estimated mid-1992, to document the TTEM program's results. The report will concentrate on the program itself, the approved subprojects, the impact on the enercon environment, and make recommendations for future enercon programs. A general format is as follows:

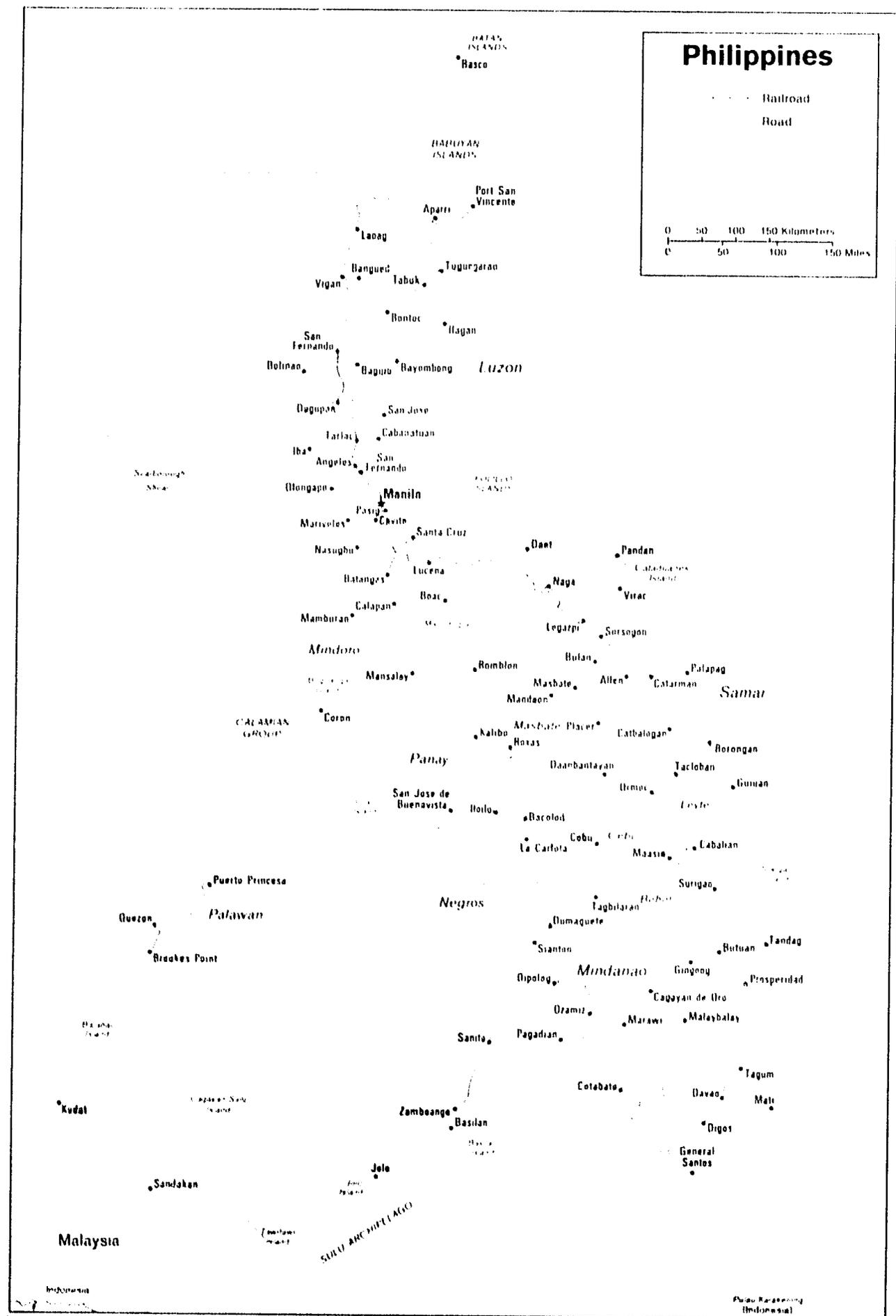
1. Background - A brief summary of the TTEM program activities throughout the life of the project, including the goals and expected accomplishments.
2. Case Studies - A summary of each DLF subproject, its performance, and applicability to other clients.
3. Technical Assessment - An evaluation of the technical assistance provided by TTEM.
4. Financial Statement - A statement of financial performance of the project.
5. Enercon Assessment - An evaluation of the impact TTEM has had on the enercon environment in the Philippines, including: technical, policy making, and adoption of technologies.
6. Summary - An overall evaluation of the program and recommendations for continuing, modifying, or terminating the activities supported by TTEM.

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Philippines

--- Railroad
--- Road

0 50 100 150 Kilometers
0 50 100 150 Miles



40

REPORT DISTRIBUTION

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Bureau for External Affairs (AA/XA)	2
Office of Press Relations (XA/PR)	1
Office of Legislative Affairs (LEG)	1
Office of the General Counsel (GC)	1
Assistant to the Administrator for Management (AA/M)	2
Assistant to the Administrator for Personnel and Financial Management (AA/PFM)	2
Office of Financial Management (PFM/FM/ASD)	2
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