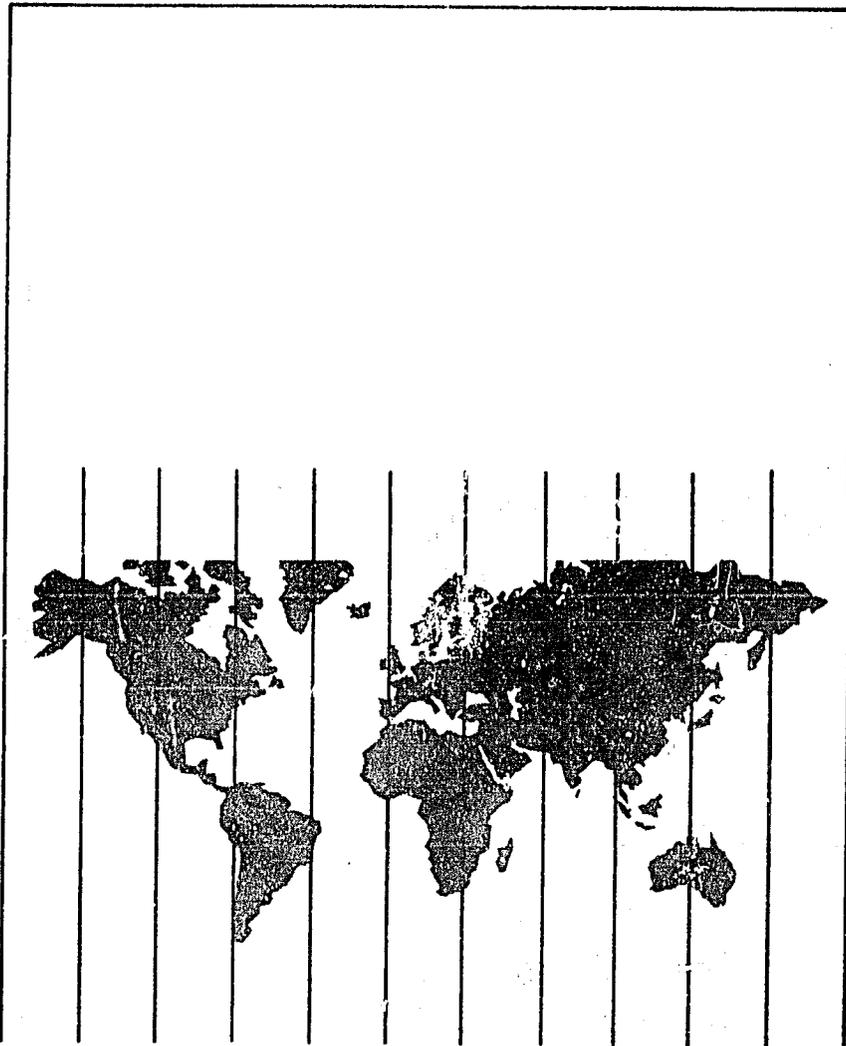


UNITED STATES
AGENCY FOR INTERNATIONAL DEVELOPMENT

THE
INSPECTOR
GENERAL



Regional Inspector General for Audit
SINGAPORE

AUDIT OF
THE RURAL ELECTRIFICATION PROJECT
IN PAKISTAN
PROJECT NO. 391-0473

Audit Report No: 5-391-88-1
October 16, 1987

October 16, 1987

MEMORANDUM FOR Mr. Eugene S. Staples, Director,
U.S.A.I.D./Pakistan

FROM: *Richard E. Derrick*
Richard E. Derrick, RIG/A/Singapore

SUBJECT: Audit of the Rural Electrification Project in
Pakistan (Project No. 391-0473)

The Office of the Regional Inspector General for Audit/Singapore has completed its audit of the U.S.A.I.D./Pakistan Rural Electrification Project No. 391-0473. Five copies of the audit report are enclosed for your action.

The draft audit report was submitted to you for comment and your comments are attached to the report. The report contains six recommendations. Recommendation No. 3(b) is considered closed and requires no further action. Recommendation Nos. 1, 2(b), and 5 are resolved and should be closed upon the receipt and review by this office of a copy of the project agreement amendment. Recommendation Nos. 6(a) and 6(c) are considered resolved and will not be closed until completion of planned or promised actions. Recommendation Nos. 2(a), 3(a), 4, and 6(b) are unresolved. Please advise me within 30 days of any additional actions taken to implement Recommendation Nos. 1, 2(b), 5, 6(a), and 6(c) and further information you might want us to consider on Recommendation Nos. 2(a), 3(a), 4, and 6(b).

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

EXECUTIVE SUMMARY

The Rural Electrification Project was designed to assist the Government of Pakistan expand reliable electric service to a greater number of Pakistan's rural population for productive and social uses, to improve the rural poor's access to that service, and increase electric power generating capacity. The project consisted of five components: 1) institutional improvement; 2) distribution function training; 3) energy loss reduction; 4) power generation; and 5) rural distribution system expansion. The project was authorized for \$169 million of which U.S.A.I.D./Pakistan has obligated \$129.5 million under project agreements. Fifty-one million dollars of the authorized level was for expanding electricity into rural areas. A project paper amendment was approved on April 24, 1987 which recommended an increase in project funds to \$338.9 million. The project assistance completion date was extended to September 24, 1992.

The Office of the Inspector General for Audit/Singapore made a program results audit of the Rural Electrification Project to review U.S.A.I.D./Pakistan's assistance to the Government of Pakistan to expand electricity into rural areas. The specific audit objectives were to assess the progress and effectiveness of the project, evaluate U.S.A.I.D./Pakistan's management of the project, and review compliance with A.I.D. policies and regulations.

The Rural Electrification Project was making progress meeting many of the project objectives, but was not meeting its principal objective, providing electricity to rural areas. U.S.A.I.D./Pakistan's management of the project was satisfactory. In implementing the project, the Mission generally complied with A.I.D.'s policies and regulations.

The project provided technical assistance and training to the Government of Pakistan's Water and Power Development Authority to upgrade its institutional capability. This assistance strengthened the Government's capacity to provide electricity to rural areas in the future. In addition, U.S.A.I.D./Pakistan financed the procurement of commodities which included two gas turbine generators which are now in operation. The project's achievements will help relieve the energy crisis in Pakistan.

The rural electrification expansion program for which U.S.A.I.D./Pakistan authorized \$51 million has not started. Technical assistance in electric utility management provided by a contractor at a cost of \$18.4 million could be more effective. Management of the energy loss reduction program needed improvement. The Government of Pakistan and U.S.A.I.D./Pakistan needed to improve its monitorship of A.I.D.-financed commodities.

The rural electrification program for which U.S.A.I.D./Pakistan authorized \$51 million has not started because the Government of Pakistan's Water and Power Development Authority did not comply with a condition precedent to the disbursement of funds. The condition precedent required the Water and Power Development Authority to prepare a master plan which would outline the means and methods for accomplishing rural electrification expansion. The Authority prepared a master plan which was superceded by another plan prepared by the Office of the Prime Minister, making the Authority's plan unacceptable to U.S.A.I.D./Pakistan. U.S.A.I.D./Pakistan will not clear the condition precedent until an acceptable master plan is prepared. Therefore, project efforts to expand electricity into rural areas have not started and the beneficiaries of the project, the rural poor, are deprived of the benefits of electricity. This report recommends that U.S.A.I.D./Pakistan take action to either reprogram or deobligate the \$51 million if the master plan is not completed by a specific date. U.S.A.I.D./Pakistan agreed with the finding and the recommendation.

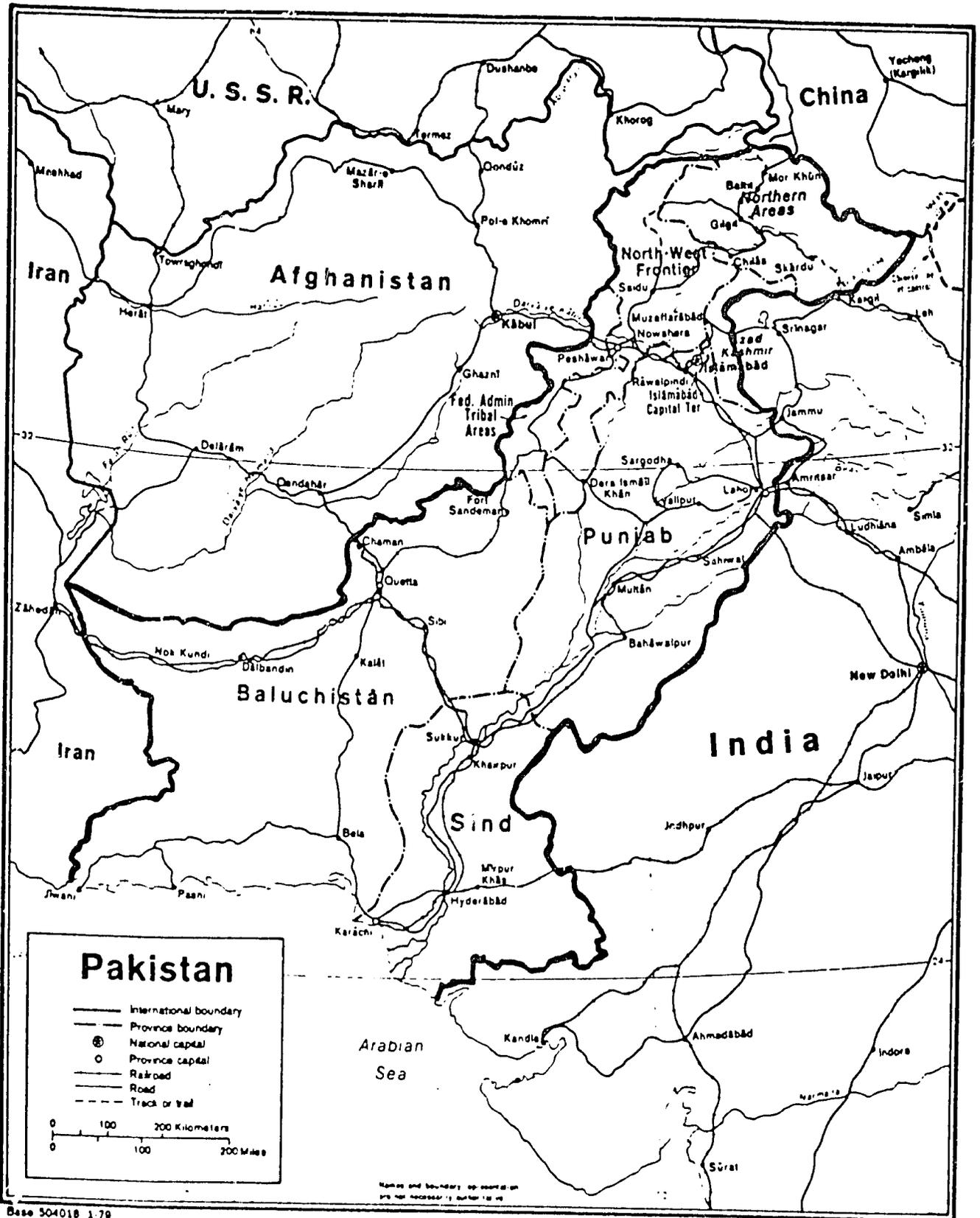
Technical assistance in electric utility management provided to the Water and Power Development Authority under a \$18.4 million A.I.D.-financed contract could be more effective. The contractor was to provide technical, commodity, and training assistance to the Authority. The contractor was scheduled to transfer these skills to the Authority by 1989. To carry out this consultant's role, the contractor was to prepare a work plan acceptable to U.S.A.I.D./Pakistan. In addition, the Water and Power Development Authority was required by the project agreements to provide adequate counterparts for the consultants. But, technical assistance provided by the contractor was hindered by the Authority's (1) inability to decide on the nature of the consultant's work which in turn precluded the contractor from finalizing a work plan, and (2) non-assignment of counterparts. At present, it is doubtful that Water and Power Development Authority personnel will have received adequate training to assume project responsibilities upon the departure of contractor personnel in 1989. The report recommends technical assistance improvements through the determination of specific technical assistance requirements, development of appropriate plans to meet those requirements, and assignment of host country counterpart personnel. U.S.A.I.D./Pakistan concurred with the finding and recommendations and one part of the recommendation No. 3 is closed upon report issuance.

The project agreements outlined an energy loss reduction program managed by the Water and Power Development Authority to reduce distribution losses. However, the program was not implemented due to poor program coordination, slow

preparation of construction work orders, an incomplete mapping program, and poor construction. As a result U.S.A.I.D./Pakistan did not expend any of the \$13 million authorized for the energy loss reduction program's construction work orders. Therefore, the benefits from U.S.A.I.D./Pakistan's substantial investment in the Guddu power plant will be reduced. Also, materials and equipment valued at \$2.5 million financed by U.S.A.I.D./Pakistan remained idle because no work orders were approved for the program. Management of the energy loss reduction program needed improvement. The report recommends that the energy loss reduction program be accelerated and the funding for the program be reviewed. U.S.A.I.D./Pakistan agreed with the finding and recommendations.

The standard provisions of the project agreements stated that the Government of Pakistan must maintain accountability records for A.I.D.-financed commodities. In addition, A.I.D. Handbook 15, Chapter 10, required that U.S.A.I.D.s monitor A.I.D.-financed commodities to ensure their effective use; a U.S.A.I.D./Pakistan mission order required project officers to monitor the effective use of commodities; and a contract provision required the contractor to monitor contract procurement. The Government of Pakistan and the technical assistance contractor could not completely account for A.I.D.-financed project commodities valued at over \$1.6 million and \$819,000 respectively. This lack of accountability occurred because (1) the Government of Pakistan did not have an adequate system to account for commodity distribution, (2) the technical assistance contractor did not maintain an inventory of commodities purchased, and (3) U.S.A.I.D./Pakistan did not effectively perform its commodity monitoring responsibilities. As a result, U.S.A.I.D./Pakistan did not know if the Government of Pakistan made effective use of A.I.D.-financed commodities. The report recommends that U.S.A.I.D./Pakistan require the Government of Pakistan and the contractor establish an adequate accounting system for commodities. U.S.A.I.D./Pakistan concurred with the finding and recommendation.

Office of The Inspector General



AUDIT OF
THE RURAL ELECTRIFICATION PROJECT
IN PAKISTAN

TABLE OF CONTENTS

	<u>Page</u>
PART I - INTRODUCTION	
A. Background	1
B. Audit Objectives and Scope	1
PART II - RESULTS OF AUDIT	3
A. Findings and Recommendations	4
1. The Project's Principal Objective, The Extension Of Electricity Into Rural Areas, Has Not Been Achieved.	4
2. The Value Of Technical Assistance Provided By A Contractor Was Questionable.	7
3. The Energy Loss Reduction Program Has Not Progressed Satisfactorily.	10
4. Management Of Project Commodities Needed Improvement.	14
B. Compliance and Internal Control	17
PART III - EXHIBIT AND APPENDICES	
A. Exhibit	
1. Commodity Differences Between WAPDA Headquarters and Warehouse Records	
B. Appendices	
1. U.S.A.I.D./Pakistan Comments	
2. List of Report Recommendations	
3. List of Report Recipients	

AUDIT OF
THE RURAL ELECTRIFICATION PROJECT
IN PAKISTAN

PART I - INTRODUCTION

A. Background

The Rural Electrification Project was designed to assist the Government of Pakistan (GOP) expand reliable electric service to a greater number of Pakistan's rural population for productive and social uses, to improve the rural poor's access to that service, and to increase electric power generating capacity. The project consisted of five components: 1) institutional improvement; 2) distribution function training; 3) energy loss reduction; 4) power generation; and 5) rural distribution system expansion.

The project was authorized for \$169 million of which U.S.A.I.D./Pakistan has obligated \$129.5 million under project agreements. Fifty-one million dollars of the authorized level was for expanding electricity into rural areas. In addition, \$1.4 million in U.S.-owned local currency was provided. The grant agreement was signed on September 25, 1982, and the loan agreement was signed on May 23, 1983. A Project Paper amendment which was approved on April 24, 1987 recommended an increase in project funds to \$338.9 million. The project assistance completion date was extended to September 24, 1992.

Project funds are principally used to finance a technical assistance contract and the procurement of commodities. The contractor is a joint venture composed of EBASCO Overseas Corporation, Inc., American Electric Power Energy Services, and The International Training and Education Company (ITECO). The project's counterpart GOP agency is the Water and Power Development Authority (WAPDA) which has its headquarters in Lahore, Pakistan. The commodity procurement included the purchase of two gas turbine generators and accessory equipment with a value of \$40.3 million for the Guddu power station.

B. Audit Objectives and Scope

The Office of the Regional Inspector General for Audit/Singapore made a program results audit of the Rural Electrification Project in Pakistan to review A.I.D.'s assistance to the Government of Pakistan's efforts to extend electricity into rural areas. The specific audit objectives were to assess the project progress and effectiveness,

evaluate U.S.A.I.D./Pakistan's project management, and review compliance with A.I.D.'s policies and regulations.

The audit was conducted in Islamabad at the offices of U.S.A.I.D./Pakistan and included trips to Lahore to the Water and Power Development Authority and the technical assistance contractor. In addition, visits were made to the Guddu combined cycle generation plant and three WAPDA regional warehouses located at Hyderabad, Multan, and Lahore. A trip was also made to WAPDA's liaison office in Karachi to observe port clearance procedures. The audit was conducted from May to July 1987. Audit work included the review of U.S.A.I.D./Pakistan, GOP and contractor records and files, and interviews with U.S.A.I.D./Pakistan, GOP and contractor officials. The audit covered the period from September 25, 1982 through March 31, 1987 and expenditures amounting to \$63 million. The reviews of internal controls and compliance were limited to activities related to the report findings. The audit was made in accordance with generally accepted government auditing standards.

AUDIT OF
THE RURAL ELECTRIFICATION PROJECT
IN PAKISTAN

PART II - RESULTS OF AUDIT

The Rural Electrification Project was making progress meeting many of the project objectives, but was not meeting its principal objective, providing electricity to rural areas. U.S.A.I.D./Pakistan's management of the project was satisfactory. In implementing the project, the Mission generally complied with A.I.D.'s policies and regulations.

The project provided technical assistance and training to the Government of Pakistan's Water and Power Development Authority to upgrade its institutional capability. This assistance strengthened the Government's capacity to provide electricity to rural areas in the future. In addition, U.S.A.I.D./Pakistan financed the procurement of commodities which included two gas turbine generators which are now in operation. The project's achievements will help relieve the energy crisis in Pakistan.

The rural electrification expansion program for which U.S.A.I.D./Pakistan authorized \$51 million made little progress. Technical assistance provided by a contractor at a cost of \$18.4 million could be more effective. Management of the energy loss reduction program needed improvement. The Government of Pakistan and U.S.A.I.D./Pakistan needed to improve its monitorship of A.I.D.-financed commodities.

The report recommends that U.S.A.I.D. take action to initiate the rural electrification program, improve technical assistance, accelerate the energy loss reduction program, and improve accountability for project commodities.

A. Findings and Recommendations

1. The Project's Principal Objective, The Extension Of Electricity Into Rural Areas, Has Not Been Achieved.

The rural electrification program for which U.S.A.I.D./Pakistan authorized \$51 million has not started because the Government of Pakistan's Water and Power Development Authority did not comply with a condition precedent to the disbursement of funds. The condition precedent required the Water and Power Development Authority to prepare a master plan which would outline the means and methods for accomplishing rural electrification expansion. The Authority prepared a master plan which was superseded by another plan prepared by the Office of the Prime Minister making the Authority's plan unacceptable to U.S.A.I.D./Pakistan. U.S.A.I.D./Pakistan will not clear the condition precedent until an acceptable master plan is prepared. Therefore, project efforts to expand electricity into rural areas have not started and the beneficiaries of the project, the rural poor, are deprived of the benefits of electricity.

Recommendation No. 1

We recommend that U.S.A.I.D./Pakistan issue a project agreement amendment which:

- (a) establishes a date for the completion of the Government of Pakistan's rural electrification master plan, and
- (b) specifies that U.S.A.I.D./Pakistan will either reprogram or deobligate the \$51 million allocated for rural electrification if the master plan completion date is not met.

Discussion

The project grant agreement dated September 25, 1982 and the project loan agreement dated May 23, 1983 stated that the project was designed to expand reliable electrical service to Pakistan's rural population for productive and social uses and to improve the rural poor's access to that service. The project's contribution to the overall sector goal was to improve the quality of life for the rural poor. According to the project agreement, a total of \$51 million was available for rural distribution system expansion and connections. The funds were to provide as many as 215,700 new connections. The new connections would be made to residences, communities, commercial establishments, industries and tube wells.

The rural electrification program made little progress because project funds were not released for the expansion of electricity into rural areas. The release of project funds was held up by the Water and Power Development Authority's (WAPDA) non-compliance with the project agreements' condition precedent to disbursement. The condition precedent required WAPDA to prepare and implement a rural electrification master plan. The plan is to include steps needed to provide additional power generation, and the means to facilitate expansion through a construction work order and management system.

WAPDA did not prepare a master plan acceptable to U.S.A.I.D./Pakistan. A master plan was prepared by WAPDA and the technical assistance contractor and submitted to WAPDA's General Manager for Distribution on November 25, 1985. WAPDA forwarded the plan to the Government of Pakistan's (GOP) Ministry of Water and Power on March 2, 1986 for approval. The Ministry of Water and Power conditionally approved the plan. The conditional approval was made because the rural electrification element did not conform to the targets of the Prime Minister's rural electrification mandate (electrify 90 percent of rural villages by 1990) which came after the plan was completed. Since it was conditionally approved, U.S.A.I.D./Pakistan did not consider the plan as satisfying the condition precedent for the use of funds for rural system expansion of electrical services and has not approved the disbursement of funds.

In a telex to WAPDA dated April 23, 1987, U.S.A.I.D./Pakistan requested immediate action on the completion of the master plan in order to assist in the completion of the amendment to the Rural Electrification Project. The U.S.A.I.D./Pakistan Project Officer believed progress on the plan would not be made unless actions were coordinated between WAPDA's Energy and Distribution Wings.

As a result of WAPDA's failure to develop a master plan, U.S.A.I.D./Pakistan funds were not released for the expansion of electrification to rural areas. Therefore, the project has not expanded electrical service to Pakistan's rural population and thus has not improved the quality of life for the poor.

Management Comments

U.S.A.I.D./Pakistan agreed with Recommendation No. 1 and has incorporated into a project agreement amendment signed July 31, 1987, conditions precedent requiring the completion of the rural electrification master plan by June 30, 1988.

Office of the Inspector General Comments

Recommendation No. 1 is considered resolved and should be closed upon our review of the project agreement amendment.

2. The Value Of Technical Assistance Provided By A Contractor Was Questionable.

Technical assistance in electric utility management provided to the Water and Power Development Authority under a \$18.4 million A.I.D.-financed contract could be more effective. The contractor was to provide technical, commodity, and training assistance to the Authority. The contractor was scheduled to transfer these skills to the Authority by 1989. To carry out this consultant's role, the contractor was to prepare a work plan acceptable to U.S.A.I.D./Pakistan. In addition, the Water and Power Development Authority was required by the project agreements to provide adequate counterparts for the consultants. But, technical assistance provided by the contractor was hindered by the Authority's (1) inability to decide on the nature of the consultant's work which in turn precluded the contractor from finalizing a work plan, and (2) non-assignment of counterparts. At present, it is doubtful that Water and Power Development Authority personnel will have received adequate training to assume project responsibilities upon the departure of contractor personnel in 1989.

Recommendation No. 2

We recommend that U.S.A.I.D./Pakistan require the Government of Pakistan:

- (a) provide a plan for the use of technical assistance under the project; and
- (b) assign host government personnel as counterparts to the technical assistance team.

Recommendation No. 3

We recommend that U.S.A.I.D./Pakistan require the technical assistance contractor revise the work plan to:

- (a) address the Government of Pakistan's technical assistance requirements; and
- (b) ensure that technical assistance personnel are not used to perform Government of Pakistan staff functions.

Discussion

The EBASCO-American Electric Power Company - ITECO Joint Venture signed a contract with U.S.A.I.D./Pakistan on January 22, 1984 for \$18.4 million to provide technical assistance through 1989. While the contract team was fully staffed in accordance with the Water and Power Development

Authority's (WAPDA) and U.S.A.I.D./Pakistan's requests, technical assistance could be more effectively used.

The contract's scope of activities provided that the contractor assist WAPDA in institutional improvement through the implementation of the distribution function training, energy loss reduction, and rural distribution system expansion components of the Rural Electrification Project. To guide contract implementation, the contractor was required to prepare a work plan 90 days after the effective date of the contract. In addition, the project agreements required WAPDA to provide adequate counterparts for the consultants.

An evaluation team in a report dated August 22, 1986 made several conclusions on the effectiveness of the technical assistance contractor. For example, the team's report brought out that during the early stages of the contract, emphasis was placed on the reorganization of WAPDA. Difficulties in getting the reorganization plan completed, approved, and staffed by WAPDA slowed much of the transfer of skills and modern utility techniques to WAPDA personnel. The evaluation team found that in view of the absence of WAPDA counterparts, consultants were willing to execute tasks themselves rather than ensuring that WAPDA staff were learning how to do the work. U.S.A.I.D./Pakistan officials acknowledged that the contractor was used in this manner.

The evaluation team further stated that WAPDA staff must be ready to take over upon the departure of contract personnel. In addition, WAPDA counterparts should take the lead in the preparation of all reports, procedures and programs. Also, the contractor should not perform tasks for the WAPDA staff. The evaluation team recommended that closer contacts be instituted by U.S.A.I.D./Pakistan to minimize use of contractor staff for assignments that do not contribute directly to assisting WAPDA improve their planning, upgrade its internal procedures, increase its efficiency, and execute its primary functions.

The contractor developed a sophisticated work plan. However, U.S.A.I.D./Pakistan held up approval of the plan until WAPDA decided on the level, make-up, and schedule of expatriate and Pakistani technical assistance required. This decision was held in abeyance until WAPDA completed its reorganization and fully staffed its new offices.

The contract was staffed to match WAPDA's organization. However, the reorganization was substantially delayed and WAPDA has not provided counterparts. The contractor reported on May 13, 1987 that the project still suffers from a shortage of WAPDA staff in key positions. Although a series of meetings were held and decisions were made, the

first new General Manager (of a total of seven required) had yet to arrive for duty. The seven required staff members were to act as lead counterparts to the contract team. In addition, the closing of the GOP fiscal year would probably delay transfers of key personnel.

In summary, the contractor's technical assistance could be used more effectively. The contract team engaged in work that deviated from the contract's primary function of providing technical assistance to WAPDA personnel. The contract team was operating without an approved work plan because WAPDA had yet to decide on the nature of the work to be performed and WAPDA had not provided adequate counterparts. Unless significant changes are implemented in contract management it is difficult to foresee the contract accomplishing its principal objective, that is, the transfer of skills to WAPDA by the contract termination date in 1989.

Management Comments

In response to Recommendation No. 2(b), U.S.A.I.D./Pakistan included conditions precedent in the project agreement amendment signed July 31, 1987 requiring the GOP to assign host government personnel as counterparts to the technical assistance contractor. Recommendation Nos. 2(a) and 3(a) have been the subject of several joint U.S.A.I.D./GOP meetings. U.S.A.I.D. believes these recommendations can be addressed upon the appointment of senior personnel at WAPDA. In respect to Recommendation No. 3(b), U.S.A.I.D./Pakistan required two members of the technical assistance team to leave for non-compliance with contract objectives and a senior foreign service national engineer was assigned to monitor the technical assistance team's activities.

Office of the Inspector General's Comments

Due to the action taken by U.S.A.I.D./Pakistan, Recommendation No. 3(b) is closed upon issuance of this report. Recommendation No. 2(b) is resolved and should be closed upon our review of the project agreement amendment. Although U.S.A.I.D. and the GOP have discussed Recommendation Nos. 2(a) and 3(a), U.S.A.I.D.'s response to our draft report did not provide specific information as to how U.S.A.I.D. intends implementing the recommendations. Therefore Recommendation Nos. 2(a) and 3(a) are considered unresolved.

3. The Energy Loss Reduction Program Has Not Progressed Satisfactorily.

The project agreements outlined an energy loss reduction program managed by the Water and Power Development Authority to reduce distribution losses. However, the program was not implemented due to poor program coordination, slow preparation of construction work orders, an incomplete mapping program, and poor construction. As a result U.S.A.I.D./Pakistan did not expend any of the \$13 million authorized for the energy loss reduction program's construction work orders. Therefore, the benefits from U.S.A.I.D./Pakistan's substantial investment in the Guddu power plant will be reduced. Also, materials and equipment valued at \$2.5 million financed by U.S.A.I.D./Pakistan remained idle because no work orders were approved for the program. Management of the energy loss reduction program needed improvement.

Recommendation No. 4

We recommend that U.S.A.I.D./Pakistan develop a plan to accelerate implementation of the energy loss reduction program by addressing the Water and Power Development Authority's coordination, work order processing, and construction problems.

Recommendation No. 5

We recommend that U.S.A.I.D./Pakistan in conjunction with the Government of Pakistan review current funding of the mapping program to ensure that sufficient funds are available to complete the program in a timely manner.

Discussion

The Rural Electrification Project Agreements called for the development and initiation of a comprehensive energy loss reduction (ELR) program. The objective of the program was to substantially reduce the significant power losses in Pakistan. Power losses affect the generation of electricity from power stations such as the Guddu power station in which A.I.D. has made a substantial investment.

Power losses which are attributable to technical and non-technical reasons pose a serious problem to Pakistan. Technical losses of generated electricity are attributed to the machinery and equipment within the electrical network while non-technical losses are related to theft, meter tampering or fraud involving the collusion of consumers and meter readers. Current power loss in Pakistan is estimated at 25 percent of net generation. Although actual losses increased in 1985-86, certain energy loss reduction efforts

not financed by U.S.A.I.D./Pakistan have had some effect on reducing losses. The technical assistance contractor estimated that the loss reduction program resulted in savings of 3.17 percent in 1984-85 and 5.01 percent in 1985-86. However, these savings could have been increased if the energy loss reduction program had operated more efficiently. The program was constrained by poor coordination, slow work order preparation, an incomplete mapping program and poor construction as discussed below.

A mid-term project evaluation cited a lack of coordination between the Water and Power Development Authority (WAPDA) and the contractor. For example, under the ELR program the contractor had designed and WAPDA had constructed a new electrical line down one side of a street. On the other side of the street, a new double circuit line was going up. Both lines started at the same grid station and serviced the same area of the city but neither WAPDA nor the contractor knew what the other was trying to accomplish. The evaluation team felt that this condition was symptomatic of a lack of coordination of contractor activities with WAPDA's distribution rehabilitation program.

Responsibility for the energy loss program was vested in WAPDA's eight Area Electricity Boards (AEB). The AEBs were responsible for the preparation of construction work orders to be approved by WAPDA and U.S.A.I.D./Pakistan. The construction involved the rehabilitation of electrical feeder lines. The work orders outlined the planned work and the estimated cost thereof. Upon approval of the work orders by WAPDA and U.S.A.I.D./Pakistan, the AEBs executed the work. At the completion of the audit, none of the AEB-prepared work orders were submitted to U.S.A.I.D./Pakistan for approval. The slow preparation and submission of the work orders by the AEBs was attributed to the introduction by WAPDA and the contractor of a new work order system. In the past, the AEBs took an informal approach to the preparation of work orders. The contractor, in conjunction with WAPDA, developed a new work order system which contained technical, financial and economic criteria providing justification of the planned work. The development of the additional detail delayed the preparation of the work orders.

Work order preparation was also delayed because a computer-based mapping program was incomplete. The mapping program provided basic data on the WAPDA electrical distribution system. The data allowed WAPDA to review AEB work orders to determine the priority for specific construction rehabilitation work in the ELR program. U.S.A.I.D./Pakistan personnel stated that the implementation of the mapping program was handicapped by a lack of funds and that the work order program would not "take off" until

the mapping program is completed.

U.S.A.I.D. did not reimburse the GOP for the costs of some construction because of poor construction work. The contractor prepared the construction work orders which were retroactively approved by U.S.A.I.D./Pakistan under a "crash program" after the construction work started. These work orders were not associated with those work orders to be prepared by the AEBs. The contractor was required to inspect the completed work. U.S.A.I.D./Pakistan examined the construction on a spot basis. Subsequent to the contractor's inspection, work orders were forwarded to U.S.A.I.D./Pakistan for reimbursement. U.S.A.I.D./Pakistan's files indicated that the initial 19 work orders forwarded for reimbursement were rejected twice because of the poor construction performed by WAPDA as indicated in the construction inspections.

As a result of the impeded ELR program, none of \$13 million authorized for the program's construction work orders were expended. In addition, unless WAPDA substantially improves its management of the ELR program, energy losses currently running at 25 percent of net generation will affect U.S.A.I.D./Pakistan's current and future investment in the Guddu Power Station. U.S.A.I.D./Pakistan provided approximately \$40.3 million to purchase two gas turbine generators for the station. The proposed project amendment provides an additional \$92 million to procure two additional generators and associated combined cycle equipment. The benefits from A.I.D.'s investment in the Guddu plant will not be maximized because of the 25 percent energy loss factor.

Also, U.S.A.I.D./Pakistan financed \$2.5 million in materials and equipment for the ELR program. The materials and equipment were to be used in conjunction with the AEB construction work. Since no AEB-prepared work orders were approved, the material and equipment remained idle at the AEB warehouses.

The project's ELR program has not made satisfactory progress due to implementation problems which include lack of coordination, slow issuance of work orders, an incomplete mapping program, and poor construction. The program's lack of progress seriously affects U.S.A.I.D./Pakistan's investment in power generation and in the procurement of materials and equipment. U.S.A.I.D./Pakistan and the Government of Pakistan need to address these implementation problems.

Management Comments

U.S.A.I.D./Pakistan agreed with Recommendation No. 4 but it does not favor accelerating implementation of the energy loss reduction program before the new work order systems are fully functioning within the Water and Power Development Authority. In respect to Recommendation No. 5, U.S.A.I.D./Pakistan stated that the project paper amendment has a provision of \$12 million for the mapping program.

Office of the Inspector General Comments

We agree that the recommended implementation of an accelerated plan for the energy loss reduction program be held in abeyance until the Authority's new work order system is functioning. Even though U.S.A.I.D./Pakistan agreed with Recommendation No. 4 they did not provide information as to their plans for addressing WAPDA's coordination, work order processing, and construction problems. Therefore Recommendation No. 4 is considered unresolved.

Recommendation No. 5 is resolved. We anticipate closure upon our review of the project paper amendment allocating \$12 million for the mapping program.

4. Management Of Project Commodities Needed Improvement.

The standard provisions of the project agreements stated that the Government of Pakistan must maintain accountability records for A.I.D.-financed commodities. In addition, A.I.D. Handbook 15, Chapter 10, required that U.S.A.I.D.s monitor A.I.D.-financed commodities to ensure their effective use; a U.S.A.I.D./Pakistan mission order required project officers to monitor the effective use of commodities; and a contract provision required the contractor to monitor contract procurement. The Government of Pakistan and the technical assistance contractor could not completely account for A.I.D.-financed project commodities valued at over \$1.6 million and \$819,000 respectively. This lack of accountability occurred because (1) the Government of Pakistan did not have an adequate system to account for commodity distribution, (2) the technical assistance contractor did not maintain an inventory of commodities purchased, and (3) U.S.A.I.D./Pakistan did not effectively perform its commodity monitoring responsibilities. As a result, U.S.A.I.D./Pakistan did not know if the Government of Pakistan made effective use of A.I.D.-financed commodities.

Recommendation No. 6

We recommend that U.S.A.I.D./Pakistan:

- (a) require the Government of Pakistan to account for commodities valued at \$1,653,447 (Exhibit 1) which were not received at the Hyderabad, Lahore, and Multan warehouses;
- (b) assist the Water and Power Development Authority headquarters establish a system to ensure that commodities distributed by the Water and Power Development Authority are received at their intended destination; and
- (c) require the technical assistance contractor to provide an inventory of contract-procured equipment valued at \$819,000.

Discussion

Standard provision B.5 of the project agreements stated that the borrower/grantee shall maintain in accordance with generally accepted accounting principles and practices, books and records, adequate to show the receipt and use of commodities.

A.I.D. Handbook 15, Chapter 10, stated that an A.I.D. mission is responsible for monitoring A.I.D.-financed

commodities to ensure their effective use. U.S.A.I.D./Pakistan's Mission Order No. PAK-15-1 outlined the mission's policy and procedures aimed at ensuring that A.I.D.-financed commodities are properly accounted for and expeditiously delivered to their destination. In addition, the technical assistance contractor was assigned responsibility under the contract to monitor contract procurement.

A review of the Water and Power Development Authority's (WAPDA) accounting records for A.I.D.-financed commodities showed that they were incomplete. WAPDA's headquarters office in Lahore was primarily responsible for accountability for A.I.D.-financed procurement. A review of headquarters' records in Lahore and records maintained at WAPDA's regional warehouses at Hyderabad, Multan and Lahore (Shalimar) showed various inconsistencies. For example, information on the distribution to regional warehouses proved inaccurate. A.I.D.-financed commodities costing \$1,653,447 could not be accounted for at the three warehouses visited. Exhibit 1 lists materials and equipment said to be shipped to the three regional warehouses but were found not to have been received. WAPDA did not know the reason for these inconsistencies because they did not have a system to monitor the flow of A.I.D.-financed commodities.

In addition, a review of the contractor's records showed that the inventory maintained by the contractor was incomplete. At the conclusion of the audit, the contractor started to inventory all commodities purchased under the contract valued at over \$819,000 but had yet to obtain complete data on purchases made in the United States.

U.S.A.I.D./Pakistan made many field visits to project sites. But they were not in a position to detect the commodity accountability problems because in the process of their field visits they did not (1) adequately study the flow of project materials and equipment and (2) conduct selective end-use tests on commodities to ensure effective use as required by the mission order.

U.S.A.I.D./Pakistan relaxed its enforcement of project agreement provisions and was not following A.I.D. Handbook guidelines on the monitorship of commodities. As a result, U.S.A.I.D./Pakistan could not determine if WAPDA and the technical assistance contractor made effective use of A.I.D.-financed commodities.

Management Comments

U.S.A.I.D./Pakistan agreed with Recommendation No. 6 that the Water and Power Development Authority account for

commodities provided under the project. The Authority is currently finalizing, with the assistance of the technical assistance contractor, a report on U.S.A.I.D./Pakistan financed commodities. The technical assistance contractor has been asked to provide details of the commodities procured under its contract. In addition, U.S.A.I.D./Pakistan issued a revised commodity control procedure which is to be implemented on all its projects.

Office of the Inspector General Comments

Recommendation Nos. 6(a) and 6(c) are resolved and will be closed upon completion of the Government of Pakistan's and the technical assistance contractor's actions to account for A.I.D.-financed commodities. The revised commodity control procedure should improve U.S.A.I.D.'s commodity monitorship.

U.S.A.I.D./Pakistan's response to the draft report did not provide enough information as to how U.S.A.I.D. would assist WAPDA establish a system to ensure commodities are received at their intended destination. Therefore, Recommendation No. 6(b) is considered unresolved.

B. Compliance and Internal Control

Compliance

U.S.A.I.D./Pakistan should ensure adherence to the project agreement provisions and A.I.D. Handbooks. For example, Finding 1 illustrates a need for the GOP to comply with a condition precedent of the project agreement. Findings 2 and 3 show that the GOP is not complying with the project agreement requirement that A.I.D. resources be used efficiently. Finding 4 indicates that U.S.A.I.D./Pakistan has not provided the monitorship on A.I.D.-financed commodities as required by Handbook 15. The audit review of compliance was limited to the findings presented in this report.

Internal Control

Tests of internal controls indicated an acceptable level of compliance, with the exception of weaknesses noted in Finding 4 concerning the management of A.I.D.-financed commodities. The audit review of internal controls was limited to the findings presented in this report.

AUDIT OF
THE RURAL ELECTRIFICATION PROJECT
IN PAKISTAN

PART III - EXHIBIT AND APPENDICES

COMMODITY DIFFERENCES BETWEEN WAPDA HEADQUARTERS AND WAREHOUSE RECORDS

<u>Commodity Description</u>	<u>Allocation by WAPDA Headquar- ters, Lahore</u>	<u>Actual Receipt by Regional Warehouses</u>	<u>Shortages</u>	<u>U.S. Dollar Cost of Commodities</u>
<u>A. At Regional Warehouse-Lahore (Visited on 6/11/87)</u>				
ACSR Conductors)				
Panther and Dog types)	440 KM	0	440 KM	\$ 319,132
Steel Angle Iron Cross Arms	500	0	500	9,910
11 KV Insulator Pins X-Arms	3,500	2,890	610	1,269
Grip Pulling Conductor)				
3 types - Grand Total)	16	0	16	960
3-Phase Meters	6,500	0	6,500	419,120
Assorted Nuts & Bolts				
1. 16 x 250 MM	500	0	500	305
2. 16 x 225 MM	100	0	100	61
Danger Sign Plates with Fittings	800	0	800	1,200
Channel Irons - 100x50x2000 MM	400	0	400	1,120
Channel Irons - 100x50x600 MM	400	0	400	3,889
<u>B. At Regional Warehouse - Hyderabad (Visited on 6/9/87)</u>				
Steel Angle Iron Cross Arms	300	0	300	5,946
11 KV Insulator Pins X-Arms	2,500	0	2,500	5,200
Various Tension Compression)				
Items)	190 sets	0	190 sets	6,350
Non Tension Jumper Sleeves	40 sets	0	40 sets	801
Various Repair Sleeves	14 sets	0	14 sets	418
Grip Pulling Conductors)				
3-types - Grand Total)	16	0	16	960
Various Lifting Capacity)				
Hoists)	9	0	9	3,642
Safety Line Grounding Sets	12	0	12	9,720
Tree Trimmers	12	0	12	1,380
Binoculars	5	0	5	255
High Voltage Detectors	12	0	12	2,855
Hand and Hydraulic)				
Compression Tools)	22	0	22	19,108
Single & 3-Phase Meters)	5,000	0	5,000	76,500
)	4,000	0	4,000	257,920
			Sub Total	\$1,148,021 =====

COMMODITY DIFFERENCES BETWEEN WAPDA HEADQUARTERS AND WAREHOUSE RECORDS

<u>Commodity Description</u>	<u>Allocation by WAPDA Headquarters, Lahore</u>	<u>Actual Receipt by Regional Warehouses</u>	<u>Shortages</u>	<u>U.S. Dollar Cost of Commodities</u>
B. <u>Con't At Regional Warehouse - Hyderabad</u>				
Danger Sign Plates With Fittings	450	0	450	\$ 675
Channel and Angle Irons	750	0	750	3,505
Shunt Capacity Banks	10	0	10	16,720
Metal Oxide Lightening Rod Arrestors)	50	0	50	1,155
C. <u>At Regional Warehouse - Multan (Visited on 6/16/87)</u>				
Steel Angle Iron Cross Arms	300	0	300	5,946
11 KV Insulator Pins X-Arms	2,500	0	2,500	5,200
D Shackle Assemblies	2,000	0	2,000	1,380
Various Tension Compression Items)	190 sets	0	190 sets	6,350
Non Tension Jumper Sleeves	40 sets	0	40 sets	801
Various Repair Sleeves	14 sets	0	14 sets	418
Grip Pulling Conductors)				
3 Types - Grand Total)	12	0	12	720
Various Lifting Capacity)				
Hoists)	6	0	6	2,428
Tree Trimmers	12	0	12	1,380
Binoculars	5	0	5	255
High Voltage Detectors	12	0	12	2,855
Hand and Hydraulic)				
Compression Tools)	22	0	22	19,108
Single and 3 phase meters)	7,000	0	7,000	107,100
)	5,000	0	5,000	322,400
Assorted Nuts and Bolts:				
1. 16x51 MM	425	0	425	98
2. 16x300 MM	750	0	750	458
3. 16x250 MM	500	0	500	305
Double Arming Bolts	200	0	200	144
Danger Sign Plates with Fittings	450	0	450	675
Stay Steel Wire (10 MM)	4,000	0	4,000	2,529
Welded Type Earth Rods	530	0	530	2,821
			Sub Total	\$ 505,426
			Balance Forward	1,148,021
			Grand Total	\$1,653,447
				=====

20



UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
MISSION TO PAKISTAN

Cable: USAIDPAK

HEADQUARTERS OFFICE
ISLAMABAD

THE DIRECTOR

September 24, 1987

MEMORANDUM

TO : Mr. Thomas B. Anklewich, RIG/A/S

FROM : Eugene S. Staples, Director *ES*

SUBJECT: Mission Comments on Draft Audit Report on the Pakistan Rural Electrification Project - Proj. No. 391-0473

First I want to commend your staff on their positive and constructive approach to the audit field work and their presentation of the findings and recommendations in the draft report. Such an attitude is, in my opinion, the way to maximize the benefits of audit while also accomplishing your independent oversight mandate. We have no significant disagreements with the findings and related recommendations; therefore, our comments primarily present the status of actions already taken and minor clarifications where considered necessary.

The following are our comments listed in order of the recommendations in the draft report:

A. Findings and Recommendations

Recommendation 1 Recommends: (a) The establishment of a date for completion of Rural Electrification Master Plan, and (b) to reprogram or deobligate the USAID funds if the date is not met.

Response: The recommendation follows the Mission's plans. The Rural Electrification Project Agreement Amendment, signed with the GOP on July 31, 1987, incorporates the recommendation as CPs 4.6A (ii) and 5.6A (ii) with a terminal date of June 30, 1988. The reconciliation of WAPDA's existing Master Plan with the Prime Minister's program to eliminate load-shedding by 1990 will be done by the GOP (Energy Wing), and resolution of economic issues will be addressed by a study to be funded under the EP&D project by the GOP Energy Wing consultants.

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RIG/A/S

21

Mr. Anklewich
Subject: DRAFT AUDIT/RE

September 24, 1987

Recommendations 2 & 3 Recommend: That (a) the GOP assign host government personnel as counterparts to the TA Team, (b) provide a Plan for use of the TA under the project, (c) PTAT revise its work plan to address GOP's TA requirements, and (d) USAID ensure that PTAT personnel are not used to perform GOP staff functions.

Response: The Project Agreement for the RE Project Paper Amendment incorporates recommendation (a) as CPs 4.6 and 5.6B. Recommendations (b) and (c) have been the subject of several Mission/WAPDA/GOP meetings and correspondence, and are a natural follow-on to the appointment of personnel to the senior positions in the revised Power Distribution Wing. Recommendation (d) has been addressed. In fact, two long-term expatriates were required to leave the Program for violation of our directions in this regard. We currently have a senior FSN project engineer based in Lahore whose responsibilities include monitoring consultant's activities in this regard.

Recommendation 4 Recommends: That ELR program implementation be accelerated.

Response: ELR program implementation is based on a Work Order System and a Monitoring and Inspection Procedure. Both of these are new to WAPDA. Mission experience to date demonstrates that WAPDA is still on the learning curve. The Mission agrees with the recommendation but it does not favor accelerating implementation before the new systems are fully functioning within WAPDA.

Recommendation 5 Recommends: Funds for mapping be made available to ensure timely completion of the program.

Response: We agree with the recommendation. The PP Amendment has a provision of \$12 million for this purpose. The amount is considered adequate since it is based on actual expenditures incurred (approx. \$800K) on mapping 190 feeders through contracts with local private firms. The money will be used for preparation of maps for the remaining approximately 2000 feeders and also towards building an inhouse mapping capability in WAPDA. We are now working with WAPDA and PTAT on a detailed mapping plan to ensure WAPDA takes fullest advantage of available funds. The objective is to develop the maps of all existing distribution feeders and also to build up capability in the Power Distribution Wing to develop the maps, be able to update them, and make use of them for ELR and rural expansion work.

Mr. Anklewich
Subject: DRAFT AUDIT/RE

September 24, 1987

Recommendation 6 Recommends: That (a) the GOP account for commodities valued at \$1,653,447 which were not received at regional warehouses, (b) WAPDA be assisted in establishing a system to ensure that commodities distributed are received at the intended destination, and (c) PTAT provide a report on its inventory of contractor procured items.

Comments: The Mission agrees with the recommendation that WAPDA account for commodities provided under the project. A revised commodity control procedure has been issued by the Mission, which is to be implemented by all projects. Additionally, WAPDA is currently finalizing, with the assistance the PTAT, its report on the USAID funded ELR commodities. The PTAT has also been specifically asked to provide details of the commodities procured under its contract. It should be noted that the commodities identified as "missing" by the Audit team is not completely as represented. The document which allocated the commodities to various WAPDA stores/warehouses was a planning document, not a report of actual commodity locations. Actually, a large quantity of commodities have yet to be received. The Mission and PTAT are working with WAPDA to finalize a completed inventory of the commodities.

B. Compliance and Internal Control

Compliance - see comments related to recommendations above.

Internal Control - We are currently conducting a Mission-wide internal control assessment to further identify any vulnerable areas and develop additional controls where necessary.

Other Pertinent Matters

Deleted - Relates to matter not included in Final Report.

LIST OF RECOMMENDATIONS

	<u>Page</u>
<u>Recommendation No. 1</u>	4
We recommend that U.S.A.I.D./Pakistan issue a project agreement amendment which:	
(a) establishes a date for the completion of the Government of Pakistan's rural electrification master plan, and	
(b) specifies that U.S.A.I.D./Pakistan will either reprogram or deobligate the \$51 million allocated for rural electrification if the master plan completion date is not met.	
<u>Recommendation No. 2</u>	7
We recommend that U.S.A.I.D./Pakistan require the Government of Pakistan:	
(a) provide a plan for the use of technical assistance under the project; and	
(b) assign host government personnel as counterparts to the technical assistance team.	
<u>Recommendation No. 3</u>	7
We recommend that U.S.A.I.D./Pakistan require the technical assistance contractor revise the work plan to:	
(a) address the Government of Pakistan's technical assistance requirements; and	
(b) ensure that technical assistance personnel are not used to perform Government of Pakistan staff functions.	

	<u>Page</u>
<u>Recommendation No. 4</u>	10
We recommend that U.S.A.I.D./Pakistan develop a plan to accelerate implementation of the energy loss reduction program by addressing the Water and Power Development Authority's coordination, work order processing, and construction problems.	
<u>Recommendation No. 5</u>	10
We recommend that U.S.A.I.D./Pakistan in conjunction with the Government of Pakistan review current funding of the mapping program to ensure that sufficient funds are available to complete the program in a timely manner.	
<u>Recommendation No. 6</u>	14
We recommend that U.S.A.I.D./Pakistan:	
(a) require the Government of Pakistan to account for commodities valued at \$1,653,447 (Exhibit 1) which were not received at the Hyderabad, Lahore, and Multan warehouses;	
(b) assist the Water and Power Development Authority headquarters establish a system to ensure that commodities distributed by the Water and Power Development Authority are received at their intended destination; and	
(c) require the technical assistance contractor to provide an inventory of contract-procured equipment valued at \$819,000.	

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