

U N C L A S S

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D. C. 20523

PROJECT PAPER

PHILIPPINES: Rural Electrification
(492-0429)

September 28, 1988

U N C L A S S I F I E D

ACTION MEMORANDUM FOR THE DIRECTOR

DATE: September 27, 1988

THROUGH : Mr. John S. Blackton, Deputy Director

FROM : Gary M. Imhoff, OCD/PDID *gmi*

SUBJECT : Rural Electrification Project
(492-0429)

ACTION: This is to request your approval of (i) the Project Paper (Tabs A-1 to A-3); (ii) the Project Authorization (Tab B); and (iii) the Project Agreement (Tab C) for the Rural Electrification Project, which has a planned life-of-project funding level of \$40 million. Funds will be authorized pursuant to Section 103 of the FAA. The planned initial obligation is \$13,886,113 in deobligated Section 103 funds.

BACKGROUND: The purpose of the proposed five-year project is to achieve the commercial viability of selected Rural Electric Cooperatives (RECs) by addressing institutional, policy and technical weaknesses related to the Philippines' rural electrification system. The project consists of two related components: (1) Institutional Development, which will provide technical assistance, training and Management Information System (MIS) improvements for the National Electrification Administration (NEA) and participating RECs; and (2) System Loss Reduction, which will finance the procurement of commodity packages for selected RECs to reduce system losses and provide NEA with commodities to enhance its ability to service RECs.

DISCUSSION: The Project Identification Document (PID) for the subject project was reviewed and approved by A.I.D./Washington in February 1988. Listed below are the concerns highlighted in the PID approval cable (STATE 867307) and the manner in which they have been addressed during project development.

Need to Rationalize REC Structures: Many of the policy concerns highlighted by the Price Waterhouse study conducted in December 1986 are now being addressed by NEA and the RECs. NEA is addressing the issue of geographic layout by performing consolidation studies on several RECs and recommending consolidation where appropriate. Policies to promote improved collection rates are now in place. NEA is in the process of divesting itself of functions not related to electric services. Through its Institutional Development Component, the project will support the continued implementation of these reforms.

Other concerns: An agreement between National Power Corporation and NEA providing for the payment of royalties to RECs with direct-connection industrial consumers within their service areas is expected to be concluded shortly. REC debt and capitalization issues are being addressed by NEA through its \$500 million Relending Program, which will provide funds to be relent to selected RECs for settlement of their unpaid NPC power bills. Technical assistance to perform rate-setting studies will be financed under the project.

Need to Coordinate with Other Donors: The Mission is coordinating with other donors involved in the sector, particularly the IBRD and ADB. The project is consistent with other donors' long-term objectives for rural electrification, and our efforts are not duplicative. The IBRD plans to release a rural electrification study in July 1989; the A.I.D. project will fill the immediate resource gap and provide support to GOP/NEA restructuring efforts. At the mid-project review, progress in attracting additional donor financing to the program will be evaluated.

Need to Revise the Schedule for COMPAC-1 Line Loss Reduction Effort. The implementing schedule has been revised with more realistic target dates and implementation milestones. The RECs eligible to receive COMPAC-1 will be visited by an IQC contractor who will determine the precise mix of materials and equipment needed by each participating REC to reduce line losses.

The Mission Review of the subject project was held August 17, 1988. Based on this review, the project goal was changed to remove the reference to affordability. Loan payments will be retained by NEA, but are not required to be used in connection with a revolving fund for further financing of REC capital requirements. The training section was strengthened, as was the section on project management. Baseline data collection has been emphasized throughout the Project Paper. Other changes that were suggested by Project Committee and Mission Review members have also been incorporated in the Project Paper.

The Project Committee has considered the utilization of Gray Amendment organizations, and recommends that U.S. technical assistance required under the project be provided through open competition, with special consideration given to firms submitting proposals which utilize the resources of small and/or socially or economically disadvantaged firms. In addition, for project evaluation services, efforts will be made to award contracts to Gray Amendment qualifying firms.

With regard to the 611(e) certification, it is believed that the Philippines has both the financial capability and the human resources to effectively maintain and utilize the capital improvements and facilities effected under the project, taking into account, among other things, the maintenance and utilization of projects in the Philippines previously financed or assisted by the United States, and the technical assistance to be provided under the project to further the country's capacity to maintain equipment and support rural electric system improvements.

Authority: In STATE 867307, the ANE Bureau authorized the Mission to develop the Project Paper and to authorize the Project. The Mission was advised in STATE 294782 dated September 9, 1988 that the waiting period for the Technical Notification expired on August 23, 1988 without objection. The Mission received a budget allowance for \$13,886,113 for the project per STATE 307970 dated September 21, 1988.

Waivers: No waivers are required at this time.

RECOMMENDATION:

Based on the above, that you indicate your approval of this memo by signing in the space provided below and authorize the subject project by signing: (1) the attached Project Data Sheet (Tab A-1); (2) the Gray Amendment Certification attached as Annex D of the Project (Tab A-2); (3) the 611(e) Certification as Annex O of the Project (Tab A-3); (4) the Project Authorization (Tab B); and the clearance sheet for the Project Agreement (Tab C).

Attachments: Project Paper
Project Authorization
Project Agreement

Approved: hkB

Date: Sept. 28, 1988

CLEARANCES:

OCD:REJordan RE
CO:JCStanford JC
PRO:WToliver WT
ORAD:KAPrussner KA
OPHN:WHJohnson WH
OD/PE:PRDeuster PR
OFFPVC:BGeorge BG
RLA:BMiller BM

cc: OCD, OCD/PDID, CO, PRO, ORAD, OPHN, OD/PE, OFFPVC, RLA, C&R

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add
 C = Change
 D = Delete

Amendment Number _____

DOCUMENT CODE

3

2. COUNTRY/ENTITY

Philippines

3. PROJECT NUMBER

492-0429

4. BUREAU/OFFICE

Asia and Near East

04

5. PROJECT TITLE (maximum 40 characters)

Rural Electrification

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY
 09 31 09 31

7. ESTIMATED DATE OF OBLIGATION
 (Under 'B:' below, enter 1, 2, 3, or 4)

A. Initial FY 88

B. Quarter 4

C. Final FY 90

8. COSTS (\$000 OR EQUIVALENT \$1 =)

A. FUNDING SOURCE	FIRST FY 88			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	11,593	2,293	13,886	32,000	8,000	40,000
(Grant)	(11,593)	(2,293)	(13,886)	(32,000)	(8,000)	(40,000)
(Loan)	()	()	()	()	()	()
Other U.S.						
1.						
2.						
Host Country	0	4,888	4,888	0	13,528	13,528
Other Donor(s)						
TOTALS	11,593	7,181	18,774	32,000	21,528	53,528

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) ARDN	062	220		0		13,886		40,000	
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

11. SECONDARY PURPOSE CODES

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To achieve commercial viability of selected Rural Electric Cooperatives (RECs) by addressing institutional, policy and technical weaknesses of the REC system.

14. SCHEDULED EVALUATIONS

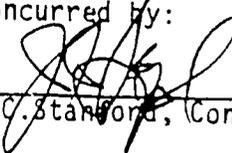
Interim MM YY Final MM YY
 07 90 05 93

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000 941 Local Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment.)

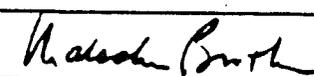
Concurred by:


 J.C. Stanford, Controller

17. APPROVED BY

Signature

Malcolm Butler



Title

Director, USAID/Philippines

Date Signed

MM DD YY
 09 28 88

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY

PROJECT AUTHORIZATION

Philippines

Rural Electrification Project

Project No. 492-0429

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended (the "FAA"), and in accordance with the ad hoc delegation of authority contained in STATE 867307 dated March 8, 1988, I hereby authorize the Rural Electrification Project (the "Project") for the Republic of the Philippines (the "Cooperating Country") involving planned obligations of not to exceed \$40,000,000 in Grant funds over a three year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the Project. The planned life of the Project is approximately five years from the date of initial obligation.

2. The Project will consist of technical assistance, training, commodities and commodity-financing to help the rural electric cooperative system achieve commercial viability.

3. The Project Agreement(s), which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with A.I.D. regulations and delegations of authority, shall be subject to the following essential terms and conditions, together with such other terms and conditions that A.I.D. may deem appropriate:

Source and Origin of Commodities and Nationality of Services.
Commodities financed by A.I.D. under the Project shall have their source and origin in the Cooperating Country or in the United States, except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the Cooperating Country or the United States as their place of

nationality, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

By: Malcolm Butler
Malcolm Butler
Mission Director
USAID/Philippines

Date: SEP 28 1988

Clearances:

	<u>Initial</u>	<u>Date</u>
OCD:RJordan	<u>[Signature]</u>	<u>9/27/88</u>
ORAD:KPrussner	<u>[Signature]</u>	<u>9/28/88</u>
OPHN:WJohnson	<u>[Signature]</u>	<u>9/27/88</u>
OFFPVC:BGeorge	<u>[Signature]</u>	<u>9/27/88</u>
OD/PE:PRDeuster	<u>[Signature]</u>	<u>9/27/88</u>
CC:JCStanford	<u>[Signature]</u>	<u>9/27/88</u>
PRO:WTOliver	<u>[Signature]</u>	<u>9/28/88</u>
RLA:BMiller	<u>[Signature]</u>	<u>9/28/88</u>
OD:JSBlackton	<u>[Signature]</u>	<u>9/28/88</u>

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UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
MANILA, PHILIPPINES

PROJECT PAPER

Rural Electrification Project

Project No. 492-0429

SEPTEMBER 1988

RURAL ELECTRIFICATION PROJECT
492-0429

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LIST OF ACRONYMS

ADB	Asian Development Bank
A & E	Architecture and Engineering
A.I.D.	Agency for International Development
AID/W	Agency for International Development, Washington, D.C.
ANE/TD/ENG	Asia and Near East Bureau/Technical Division/Engineering
ARO	Asian Research Organization
CBD	Commerce Business Daily
CIF	Cost, Insurance and Freight
COA	Commission on Audit
CPU	Central Processing Unit
CSP	Completely Self-Protected
CY	Calendar Year
DA	Development Assistance
DBP	Development Bank of the Philippines
DENR	Department of Environment and Natural Resources
ESF	Economic Support Fund
FOB	Free on Board
FSN	Foreign Service National
GM	General Manager
GOP	Government of the Philippines
IA	Institutional Assistance
IBRD	International Bank for Reconstruction and Development
IQC	Indefinite Quantity Contract
IRR	Internal Rate of Return
KV	Kilovolt
KWH	Kilowatt Hour
L/COM	Letter of Commitment
MFSR	Management and Financial Status Report
MIS	Management Information System
NEA	National Electrification Administration
NPC	National Power Corporation
NPV	Net Present Value
NRECA	National Rural Electric Cooperative Association
OCD/EIE	Office of Capital Development/Division of Energy, Infrastructure and Engineering
OECD	Overseas Economic Cooperation Fund
O&M	Operation and Maintenance
PIO/T	Project Implementation Order for Technical Services
PP	Payback Period
PSA	Procurement Services Agency
PSC	Personal Services Contract
PW	Price Waterhouse
RE	Rural Electrification
REA	Rural Electrification Administration
REC	Rural Electric Cooperative
REM	Regional Electrification Manager
RFTP	Request for Technical Proposals
RIG/A	Regional Inspector General/Audit
TDY	Temporary Duty
USDH	United States Direct Hire

I. EXECUTIVE SUMMARY

The goal towards which the Rural Electrification Project contributes is to increase the reliability of electric power service in rural areas of the Philippines. The purpose of the project is to achieve the commercial viability of selected rural electric cooperatives (RECs) by addressing institutional, policy and technical weaknesses of the rural electrification system. By the end of the project, it is expected that a majority of the RECs participating in the project will be commercially viable distributors of electric power in their service areas. Reliable electric power in the rural areas of the Philippines will increase employment opportunities, provide opportunities for the development of rural enterprises, increase agricultural productivity, increase rural incomes and improve the physical quality of life.

A.I.D. will provide an estimated \$40 million of bilateral Development Assistance (DA) funding or 75% of the total project cost over a five-year period. The GOP will provide or cause to be provided a contribution of 25% of total project cost. A.I.D. funds will be obligated incrementally with an initial estimated obligation of \$14.0 million in FY 1988. Substantial GOP reforms are now ongoing in the rural electric sector, demonstrating the commitment of the GOP to the restructuring and upgrading of the nationwide rural electrification system. The project is intended to support these reforms, and to support the efforts of individual rural electric cooperatives in meeting managerial reform and technical line loss reduction targets.

The focus of the project will be on the rehabilitation and rationalization of the existing system rather than on expansion of systems. The project will address the institutional, policy and technical problems of the Philippine rural electrification system by providing technical assistance, training and commodity inputs to support institutional reform efforts within the National Electrification Administration (NEA) and the rural electric cooperatives (RECs), and by providing financing for essential commodities needed to reduce system losses. The project will finance the CIF value of commodities procured for participating RECs. However, a REC receiving project-financed commodities will incur a loan obligation to NEA equal to the FOB value of the commodities procured, plus interest. REC loan payments will be retained by NEA for use by NEA.

The principal GOP implementing agency will be NEA. The project will procure technical assistance through A.I.D.-direct and host country contracts. The procurement source for services and commodities will be the United States and the Philippines.

AID financed inputs will include: short- and long-term technical assistance in management, accounting and electrical distribution engineering (\$4.968 million); training (\$320,000); and commodities (\$31.8 million). Funds are also provided for project management, evaluation, audit, inflation and contingency (\$2.912 million).

II. PROJECT RATIONALE

The Philippines has experienced an extended period of economic depression and parallel deterioration of essential socio-economic infrastructure. This latter condition is especially severe in outer islands and rural areas which traditionally receive a smaller share of GOP investments. Changes are being made by the new government, but participation of the rural sector in the recovery will be limited unless highly deteriorated or inefficient infrastructure, including electric power distribution systems, is upgraded to allow the private sector to produce and exchange essential goods and services efficiently. Access to reliable power is key to rural employment and growth in the Philippines.

Electricity in the rural areas of the Philippines is distributed through a system of Rural Electric Cooperatives (RECs) established and run under the auspices of the National Electrification Administration (NEA). Since 1969, NEA's mandate has been to plan, supervise and fund REC development. Cooperatives account for 12% of the electricity sold in the country, and have enabled the growth of small- and medium-scale industries and agro-industries by providing power for irrigation pumps, welding shops, ice plants and other enterprises. The RECs have risen to become an important institutional force in the Philippine countryside.

The rural electric system has grown rapidly since its organization in 1969. AID has invested \$86 million in the program since undertaking the first feasibility study in 1964. Other donors, including the World Bank, the Asian Development Bank (ADB), Germany, France, and Japan, followed its lead with \$343 million in additional assistance. The national policy objective of total electrification, first articulated in 1969, remains a cornerstone of the GOP's rural development strategy. Following the electrification of one million households in its first decade, from 1969 to 1979, the NEA embarked on a program of unprecedented systems expansion and electrified its two millionth rural household in 1982.

As of July 31, 1987, 117 RECs served 1,278 towns and cities, 19,939 barangays and 2,813,330 households. Total revenue sales of the electric cooperatives reached \$3.1 billion in 1986. On August 6, 1988, NEA celebrated its 15th anniversary, at which time it energized its 3,000,000th household. During the growth years of the RECs, the NEA program thrust was the expansion of electrification in the rural countryside in order to hit a target objective of total electrification by 1990.

Due to the rapid expansion of the service areas, institution-building within the cooperatives and NEA was given lesser priority and, particularly since 1980, has not been adequately addressed. The strain of rapid expansion, together with increasing world energy prices gave rise to financial and operational problems in the rural electrification sector. NEA and the RECs were not ready for the severely depressed economy that started in 1983, which adversely affected their commercial and operational viability. The RECs, originally oriented towards construction and expansion of distribution lines, had difficulty in shifting priorities to maintaining institutional and financial viability.

The rapid drive toward total area coverage described above severely tested NEA's managerial capacity and was a major factor in its subsequent poor performance. The strain of rapid growth without adequate institution-building, coupled with the economic and political pressures weighing on the country and the increasing world price of energy, gave rise to a constellation of problems in the rural electrification sector. By February 1986, mismanagement and politicization had left NEA and the cooperatives in a state of disarray and insolvency. Financial, managerial and technical problems, if left to deteriorate, threatened to destroy the significant strides made in rural electrification and the potential it has created for rural development.

In December 1986, Price Waterhouse (PW), an international consulting firm, was contracted by A.I.D. to perform a financial, management and technical assessment of NEA and selected RECs. The purpose of the study was to assess the RECs' situation, determine the underlying causes of the financial and operating problems in the rural electric cooperative system and prepare recommendations which would address those problems.

The PW study^{1/} disclosed that:

- NEA and the RECs had become involved in projects unrelated to rural electrification that were a drain on scarce resources.
- NEA had failed to provide adequate supervision of and technical guidance to the RECs.
- Many of the original RECs' coverage areas had been subdivided into much smaller units and had become economically unviable.
- The REC distribution network was in dire need of rehabilitation.
- NEA was not viable without continued subsidy and could not repay existing foreign borrowings.
- The rural electrification program suffered as a result of mismanagement, politicization and responsibility for unrelated activities.
- There was minimal member understanding, participation or involvement in REC affairs.

^{1/} Price Waterhouse. National Electrification Administration and Rural Electric Cooperatives Financial, Organizational and Technical Assessment. March 1987.

In order to address the problems identified above, PW in its report to A.I.D. developed a comprehensive plan of action to make the rural electrification system commercially viable. The plan of action suggested changes in the GOP policy, NEA and REC operations.

PW made the following recommendations with regard to GOP Policy:

- Turn over all National Power Corporation (NPC) direct connection non-utility customers to the distribution utility holding the area coverage franchise. To the extent possible, eliminate intra-government competition in distribution of electricity.
- The GOP should assume foreign exchange exposure on all present and future foreign currency loans of NEA.
- NEA and the RECs should cease all activities unrelated to rural electrification (BLISS program, TANGLAW, livelihood projects, etc.).
- Transfer ownership and operation of REC generation and transmission assets and associated debt to NPC on case by case basis. To the extent possible, eliminate intra-government competition in the generation and transmission of electricity.
- Design a rural electrification NPC tariff which is consistent with GOP rural electrification.

PW made the following recommendations with regard to NEA:

- Prepare a plan to consolidate existing REC coverage areas into units of commercially viable size and customer mix.
- If external assistance is provided, establish a revolving loan fund for future REC system needs.
- Conduct member referendums at all RECs documenting member acceptance of individual REC financial and operating targets as a condition of receiving external assistance. If agreed-upon targets are not met, NEA will take swift action to reorganize, merge or sell the REC.
- RECs (post consolidation) should undertake a rate study based upon the principles of marginal cost pricing.
- NEA should re-establish its REC supervisory and monitoring function.

PW made these recommendations with regard to the RECs:

- Study alternatives to improve repair facilities for REC equipment.

- Undertake both System and Operation and Maintenance Studies at all RECs to determine system operating requirements, system improvements and rehabilitation needs.
- Redirect the activities of the member services department to emphasize member communication, education and involvement in REC affairs.
- Design and implement a microcomputer-based billing and customer accounting system.

The new GOP administration received the results of the PW study very favorably and responded by committing itself to reform and rehabilitation as preconditions for future systems expansion. Many of the PW recommendations have been acted upon by the GOP already, and significant reforms are currently underway. The commitment of NEA under its new leadership may be demonstrated by the following recently adopted measures:

- Appointment of a new and more streamlined policy oriented Board of Administrators at NEA;
- Activation of an NEA Executive Committee, which meets weekly to provide policy recommendations to the Board;
- Agreement in January 1987 with the NPC, the agency responsible for the generation of electricity, to give a two-year moratorium to selected RECs on payment of arrearages to NPC;
- Provision, in September 1987, through the Department of Finance of an additional P500 million equity contribution to NEA to be relent to selected RECs for settlement of their unpaid NPC power bills;
- Agreement with NPC in May 1988 for NPC to take over the operation and maintenance of REC-owned 69 KV transmission lines, thus relieving the RECs of the operating and financial burden of such non-revenue producing facilities;
- Agreement with NPC in May 1988 to a scheduled NPC take-over of REC owned and operated self-generation facilities where the RECs are not connected to the NPC grid. Such take-overs will not only relieve the RECs of the financial burden of operating expensive generating facilities but will also directly result in lower power rates to REC members;
- Agreement for NPC to provide P10 million to NEA (\$500,000) for bridge financing loans to selected RECs for commodities (capacitors, oil switches, reclosers) to improve power load factors, which will contribute to savings in line losses;
- Agreement with the ADB to utilize up to \$5 million in available ADB funds for procurement of poles, meters, transformers and service drop wire for expansion of qualified RECs;

- Negotiations undertaken between NEA and NPC to agree upon a system for payment of royalties to the RECs for those industrial consumers located within REC service areas which are directly connected to and serviced by NPC.

The NEA itself has also developed and begun to implement a comprehensive reform and rehabilitation program for the NEA and the RECs including:

- Implementation of a reorganization plan for NEA, approved by the GOP Civil Service Commission, to streamline and improve overall operations;
- Initiation of a program to reconcile all NEA/REC loan accounts by the end of calendar year 1988.
- Development of a program, including technical and non-technical measures to minimize system losses, with an aim to bringing selected REC system losses to 15% or below;
- Development of a program to increase the power load factor to at least 95% on all REC systems;
- Identification and initiation of a targeted NEA relending program to 19 of the most needy RECs, located primarily in Central Luzon and Bicol regions. Ten of the nineteen selected RECs are in Region III of Central Luzon where fully half of the total value of all arrearages to NPC are found. Thirteen of the targeted RECs are in areas wherein the REC had taken ever old, inefficient, and undersized municipal or privately owned substations and distribution lines which are in need of replacement. These nineteen RECs will be the prime beneficiaries of the P500 million relending fund to settle NPC arrearages;
- Contracting in July 1988 of additional external auditors by NEA to conduct immediate and comprehensive financial and management audits of 19 financially distressed RECs included in NEA's P500 million relending program. NEA's 20 auditors from its external audit office were already assigned to 10 electric RECs needing immediate attention;
- Temporary replacement by NEA staff of REC general managers in several of the most politicized and/or poorest performing RECs. In some instances the REC Board of Directors has also been disbanded pending management reform and improved performance levels by the REC. Nineteen RECs have thus been taken over by NEA;
- Concluded written agreements of commitment and support with several of the RECs in the NEA targeted relending program setting forth three-month, six-month, and one year targets for both improved performance in key result areas by the RECs and levels of financial, materials and institutional support to be provided by NEA;

- Creation by NEA, under Office Order No. 236, series of 1988, of a Committee to undertake a three-year performance evaluation of RECs, excluding the beneficiaries (19) of the NEA Relending Program. The objective of the evaluation is to group the RECs according to their current level of performance and to recommend courses of action needed to improve overall REC operation. Desired levels of performance in key performance areas have been established as follows:

Table i

<u>KEY PERFORMANCE AREA</u>	<u>DESIRED LEVEL</u>
1. NEA Amortization Payment	- current
2. NPC Power Account	- current
3. System Loss	- 15% or below
4. Collection Efficiency	- 99%
5. Accounts Receivable	- less than two (2) months sales
6. Advances to Officers and Employees	- ₱50,000 and below
7. Distribution Expense - Operation and Maintenance	- ₱100.00 per km.
8. Consumer Account Expense	- ₱7.00 per consumer
9. Administrative and General Expense:	
2,000 MWH Sales and above/mo.	- ₱0.11 per kwh sold
1,000 to 1,999 MWH Sales/mo.	- ₱0.17 per kwh sold
less than 1,000 MWH Sales/mo.	- ₱0.23 per kwh sold
10. Signed Up Membership	- 80%
11. Involvement in Annual Meeting	- 16%
12. Involvement in District Elections	- 80%

The targeted performance levels demonstrate that the GOP and NEA have embarked on an ambitious reform program to restore the REC system to commercial viability. Ultimately, the needs for physical rehabilitation of REC utility equipment and the broader issues of institutional reform must be fully addressed to assure long-term viability. Meanwhile, because of a lack of financial resources, NEA is concentrating on the reduction of non-technical losses to improve system efficiency, such as the collection of overdue bills, cutting off of chronically delinquent consumers, identifying illegal connections, replacement of uninsulated service drop wire, etc. While a sympathetic attitude of REC members is expected, particularly in areas where electric service is less than satisfactory or where RECs are inefficiently managed, the program faces some opposition in spite of its aim to bail out financially distressed or mismanaged RECs. This is particularly true in those areas where NEA has taken over management of the systems. Thus, it is imperative that sufficient financial and material resources be immediately provided to the program to be able to demonstrate some measurable program results to affected REC membership as soon as possible.

III. PROJECT DESCRIPTION

A. Project Goal and Purpose

The goal towards which the Rural Electrification Project contributes is to increase the reliability of electric power service in rural areas of the Philippines. The purpose of the project is to achieve the commercial viability of selected RECs by addressing institutional, policy and technical weaknesses of the REC system. Achievement of this goal will contribute to:

- increased opportunities for the development of rural enterprises;
- increased rural employment;
- increased agricultural productivity;
- improved physical quality of life; and
- increased rural incomes.

The project will support the RECs' system loss rehabilitation efforts, management information system (MIS) improvements, and enhanced safety and maintenance by providing essential commodities to reduce system losses.

The project will focus on the rehabilitation and rationalization of rural electric systems rather than expansion, which may be defined as the addition of primary, secondary or new service lines to serve new consumers. Therefore, its outputs will be measured in terms of improved operating efficiency rather than physical growth. Accordingly, the development of a commercially viable rural electrification system will be the major achievement of this project. It is expected that a majority of the RECs participating in the project will be commercially viable distributors of electric power in their service areas by the end of the project. Specifically, it is anticipated that the project will result in:

- An increase in REC collection efficiency of participating RECs to an average of 95% of total accounts receivable (not of monthly billings, as was previously computed);
- A decrease in operating expenses per kilowatt hour (KWH) and accordingly in rates of participating RECs;
- Significant technical improvements and sharply reduced power outages of participating RECs;
- Introduction of computerized billing and management information systems at both the NEA and participating REC levels;
- Maintenance of power factor efficiencies on participating systems of not less than 92%; and
- A reduction in participating RECs' systems losses from up to 50% to an average below 15%;

B. Description of the Project

The project will provide \$40 million to the Government of the Philippines (GOP) over a five-year period, subject to the availability of funds and budgetary allocations, to finance the costs of the project's two components: (1) Institutional Development and (2) System Loss Reduction. These two related components are designed to overcome existing constraints to the achievement of commercial viability of selected RECs. The project will focus on the rehabilitation of the existing systems of selected RECs rather than on the physical expansion of those systems.

The Institutional Development component is aimed at managerial improvements within the NEA, including the installation of an improved MIS, and a concomitant transfer of knowledge to the RECs. Institutional development efforts will also be undertaken directly at the REC level to address the specific problems identified by the PW study, as presented in the Project Rationale section. A number of these recommendations have been accepted and implemented already by NEA. Under the System Loss Reduction component, essential commodities will be procured to attack the line loss problems of selected RECs. Approximately 70 RECs will be selected over the life of the project to receive tailored commodity assistance packages valued at \$120,000 to \$410,000.

The project will be incrementally funded. An initial increment of approximately \$14 million will be provided in FY 1988 as a demonstration of A.I.D. support to the substantial GOP/NEA reform efforts underway, and will be targetted at the approximately 20 better-managed REC's in need of material resources to achieve systems loss reductions and the 19 RECs, identified by NEA as viable but poorly-managed, in need of both technical assistance and commodity support. Assistance will also be extended to NEA, to support institutional development efforts currently underway. Subsequent increment(s) will be provided following a mid-project review and will be subject to continued GOP/NEA commitment to the comprehensive rehabilitation program to achieve the commercial viability of the rural electrification system and the demonstrated efforts by the RECs themselves to address their own operating and managerial inefficiencies.

1. Institutional Development.

Under this component, the project will finance technical assistance, training and computer equipment to support the institutional development efforts of NEA and participating RECs. All RECs are eligible to participate in the Institutional Development component of the project. However, assistance to those RECs which rely on self-generating power plant facilities, or are under management contract, or have been determined to be non-viable by NEA, will be limited to technical assistance to perform operating studies to recommend action plans for the RECs' operating future. The focus of the institutional development efforts will be on the remaining RECs, of which there are currently 93, considered to be financially viable or to have the potential to be financially viable. Particular attention will be paid to those RECs which lack adequate management capability.

a. Technical Assistance. The project will finance technical assistance required to support the undertakings of NEA and participating RECs to improve the efficiency and effectiveness of management systems and personnel.

Technical assistance will be provided on both a long- and short-term basis. Expatriate long-term advisors will assist NEA in contracting for appropriate locally-based advisory services. They will be tasked with developing contract scopes of work and overseeing the performance of the local firms. The expatriate firm will be contracted to provide long-term technical assistance in finance, accounting, management and institutional development and in electrical distribution engineering. Contractor personnel will be resident at NEA, and will use NEA as their base for working with the RECs receiving assistance under the Project. The contractor will assist NEA develop its capacity to monitor and serve RECs more effectively. The contractor will also work directly with individual RECs to help them improve their financial, managerial and technical capabilities. The expatriate contractor will provide short-term advisors, as required, to assist NEA's undertaking software identification and/or development, rate-setting studies, training module development and training seminars and programs for NEA and REC staff.

NEA will also contract with local engineering and accounting and management consultant firms to perform operation and maintenance (O&M) studies, develop systems mapping, make financial projections, and install the management information, reporting and billing systems developed under the project at NEA and at the participating RECs.

An illustrative list of specific tasks to be carried out under the institutional development program is presented below:

- o Develop/implement short and medium range strategies to restore commercial and operational viability of existing RECs;
- o Develop/oversee implementation of REC organizational structure and staffing levels consistent with the commercial operation of the RECs;
- o Identify RECs which are unlikely to achieve commercial viability and propose an action plan for their operating future. Subsidy requirements should be clearly identified as such;
- o Perform consolidation studies as appropriate and assist in implementation of recommendations;
- o Perform systems studies of RECs to determine a 10-year projection of physical plant and capital requirements;
- o Assist NEA to develop a program to divest itself over time from all activities unrelated to rural electrification;

- o Develop and assist in the implementation of a comprehensive training program for NEA top and middle management, general managers and department heads of the RECs;
- o Develop appropriate REC rate setting methodology and instruct NEA/REC personnel in its utilization;
- o Develop/implement a program for NEA to reschedule REC loan amortizations to 1) address the significant arrearage problem and 2) to establish realistic payment schedules which can be adhered to by the RECs;
- o Develop/implement an automated loan administration system at NEA and train NEA staff in its operation;
- o Develop/implement an automated financial record keeping system at NEA, including the general ledger and significant subsidiary ledgers;
- o Develop/implement a management reporting system consistent with the business purpose of NEA; and
- o Develop/implement a microcomputer-based customer accounting system for the RECs which encompasses customer information, billings and management reporting. Provide training in systems operation.
- o Develop NEA and REC accounting and administrative procedure manuals. Provide training in their use.

The resident advisors will also identify and arrange for required short-term expatriate consultancies. Up to five such consultancies per year are contemplated.

The long-term contractor will be expected to assist NEA and/or the Federation of Rural Electric Cooperatives (FECOPHIL) conduct a feasibility study of regionally-based service centers to meet REC equipment servicing needs, as outlined below:

Study on Maintenance and Repair Options/Equipment Servicing

Since the beginning of the Rural Electrification Program in the Philippines in the late 1960's, A.I.D. and other agencies have provided large quantities of electrical equipment for use in the distribution systems for the Rural Electric Cooperatives (RECs). At least 5% of the individual items procured are no longer usable and are stored at the REC headquarter sites. Rehabilitation requirements range from minor bushing replacement to major rewinding of core/coil assemblies. Because of the lack of parts and, in most areas, rehabilitation expertise, the stock pile of unusable equipment has been increasing monthly. An estimated \$2.0 - 3.0 million of unusable equipment is now stored at the RECs nationwide, unusable but still listed as assets in loan documents (the cost for which is repayable to the NEA).

The project will finance the procurement of significant amounts of electrical equipment. Without measures to address future maintenance and repair needs for these commodities, the number of unusable items is likely to increase. An Indefinite Quantity Contractor (IQC) will assist NEA in assessing technical equipment requirements at the earliest possible date to ensure continuing equipment maintenance and usability and establish equipment requirements.

Under the guidance of the long-term consulting team, an assessment of the feasibility of establishing regionally-based service centers for equipment repairs and supplies will be undertaken. Tasks will include collecting and analyzing information, outlining options and making recommendations on actions to be taken. Study results would serve as the basis for determining what, in any, A.I.D. assistance would be provided in this area. The proposed study should include, but not be limited to the following:

1. Equipment Inventories: (a) Unserviceable equipment items at the RECs, including electrical apparatus such as transformers, voltage regulators, oil circuit reclosers; test meter apparatus; safety and hot line equipment such as rubber gloves and hotsticks; tools and work equipment; communication equipment, etc.; and (b) equipment items to be stocked (e.g., electrical equipment parts, voltmeters) and other equipment such as mobile transformers.
2. Maintenance/Repair Options: Describe and analyze various options for providing equipment servicing on a regular basis, including private enterprise, using regional cooperatives, etc. Analysis and recommendations should address (a) capacity/number of units required for the rehabilitation of existing equipment and maintenance of all equipment over time; (b) location options; (c) feasibility of combining repair and parts supply facilities; (d) need/options for regularly scheduled preventive maintenance for selected substation equipment; (e) alternative financing schemes for initial investment and continued servicing, including private sector, regional service centers, etc.; (f) time period to establish effective facilities such as Service Centers; (g) training requirements, if any; and (h) other relevant information.

b. Training.

Annual training plans will be developed by NEA and REC staff with the assistance of technical assistance contractors, for training programs which will include substation operation and maintenance, line equipment maintenance, meter testing and repair, and a development program for REC managers and supervisors (encompassing distribution system engineering, planning and design, construction and operations and maintenance, materials management, inventory control, accounting, auditing, financial planning, cash management and management).

Training modules for REC managers and staff will be conducted by NEA, with the assistance of technical assistance contractors. NEA staff will be trained in-house, and also at various local institutes. REC staff will also receive on-site training, as needed. Training will be conducted by U.S. or Philippine consultants depending upon the subject matter. Most training will be carried out in the Philippines, and will be short to medium term in duration. Longer term or participant training will be considered only on an exceptional basis.

c. Commodities

Under the Institutional Development component, the project will grant finance computer hardware and software procurement for NEA and participating RECs related to their efforts to improve management efficiency and effectiveness. As mentioned above, NEA will undertake a detailed requirements analysis with the assistance of a short-term technical assistance contractor. Equipment and software to be financed under the project and the timing of procurement will be based upon the requirements analysis. Depending on the study results, A.I.D. funding assistance to address the repair and equipment servicing problems will be considered for project financing.

For the implementation of management information system (MIS) improvements at the REC level, the use of microcomputers and commercially available (or that developed for U.S. REC's) software is contemplated. At least one "stand-alone" microcomputer package and associated software will be provided to each REC assisted under the project. These computer packages will be provided to the RECs as a grant, as will all technical assistance inputs.

A different approach for computer procurement will be taken at NEA. For the implementation of the planned Loan Administration and Inventory Control system, microcomputers and commercially available software will be procured. The number will be determined as part of the assessment. However, for the implementation of an Integrated General Ledger and a Financial Management Information System, consideration will be given to the purchase of a minicomputer package (valued at approximately \$350,000) for installation at NEA.

Prior to any computer procurement over \$100,000, including software, hardware and maintenance, M/SER/IRM review and approval will be necessary. NEA will contract with a local firm or firms for the installation and testing of the MIS systems developed under the project. The resident advisors will have oversight responsibility.

2. System Loss Reduction Program.

Under this component, the project will provide financing for the procurement of commodity packages (COMPACs) for selected RECs to reduce system losses and a commodity package for NEA to enhance its ability to service RECs.

This component will begin with a quickly-launched program to reduce system losses through the immediate procurement and provision of essential

commodities to selected RECs which have been experiencing line losses of up to 50% because of lack of spare and replacement parts and line hardware. Early provision of essential commodity inputs will not only demonstrate AID's support to the GOP/NEA reform efforts, but will more importantly enable NEA to provide material support to selected better managed RECs and at the same time entice those less well managed to begin to undertake needed institutional reforms. A reduction in line losses will have an almost immediate direct impact on a REC's revenue base. For example, with only a 10 percentage point reduction in line losses in a cooperative with 10,000 consumers and annual sales of 17 million KWHs, the cooperative could realize P4,250,000 (at P2.50 per KWH) annually from the additional 1700 thousand available KWHs. Higher revenues would of course flow from greater reductions in line losses. Such a demonstrable impact is of vital importance to the NEA, particularly where it has taken over REC management, in its attempts to move the RECs towards management reform and commercial viability.

After the initial procurement of commodity packages for RECs selected at the outset of the program, and depending on the results of the mid-term project assessment discussed in the evaluation section below, the project will launch a second round of commodity procurement for those RECs that participated in the initial round but received only a limited package of commodities, and for those RECs that did not receive equipment under the initial procurement but have been able to improve their performance to meet the qualifying criteria.

The commodity packages will be provided to the RECs from NEA on a loan basis. To ease the financial burden on the RECs, the repayment value of the commodities will be on an FOB cost basis. Procurement agent costs, along with ocean freight and insurance (approximately 30% of the CIF Philippines value), will be borne by the project, under A.I.D. financing. Storage, handling and installation costs will be borne by either the RECs or NEA. Inland or inter-island delivery costs will have to be borne by the RECs unless absorbed by the NEA. As described in the Commodity Financing section below, loan payments will be retained by NEA.

Several distinct commodity packages are planned under the system loss reduction component, as described below.

a. Commodity Package 1 (COMPAC-1).

The first commodity package (COMPAC-1) will consist of a tailored package of commodities to reduce system losses for selected RECs that have been determined to have adequate management systems and personnel in place and do not need technical assistance prior to or concurrently with receiving commodities. COMPAC-1 commodities will include watt-hour meters, single phase transformers, test equipment, poles and cross-arms, tools, connectors, sectionalizing equipment, conductors, safety equipment, etc. Each of the approximately twenty RECs eligible to receive COMPAC-1 will be visited by an IQC contractor who will determine in conjunction with the individual REC, the exact mix of materials and equipment necessary to reduce line losses. This initial package of commodities will be limited to a maximum CIF value of \$410,000 for each eligible REC. See Table 2 for a typical package.

The first twenty RECs eligible to apply for loan packages to participate in the systems loss reduction program through COMPAC-1 have been identified using the criteria recommended by PW in its report to A.I.D. The criteria for selection of RECs under the first commodity package include:

1. Quantitative Factors:

- current with NPC payments;
- current with NEA amortizations;
- positive net operating margin;
- collection efficiency greater than 85%;
- must serve at least 10,000 consumers; and
- currently rated A or B on NEA' REC assessment system.

2. Qualitative Factors:

- consistency with ADB's financial consideration of eligibility for funding; and
- connection to the NPC grid.

REC eligibility to apply for the loan packages does not automatically guarantee its participation in the program; a financial viability assessment of the proposed procurement will be required of each before the loan agreement between the REC and NEA is signed. NEA will contract with a local accounting firm or financial institution to perform/assess the financial viability statements for each participating REC, as needed. Other criteria as may be deemed appropriate will be added to the standard loan agreement, which will be approved by A.I.D. and NEA before commodity procurement begins.

Table 2
Typical
Commodity Procurement Package One (COMPAC-1)

- PER-REC -

1. Line Type Transformers (60 units)	\$ 36,000
2. Instrument Transformers (metering) (28 units)	7,000
3. Kw/Kwh Meter (2600 units)	90,000
4. Sectionalizing Equipment (22 units)	15,000
5. Line/Equipment Protective Devices (52 units)	11,000
6. Voltage Regulation/Power Factor Control Devices (18 units)	32,000
7. Test Instruments for Operations, Maintenance (42 units)	16,000
8. Tools/Work Equipment for Operations, Maintenance (37 items)	11,000
9. Wood-Pole Treatment Chemical Applicators (1700 pcs.)	<u>30,000</u>
Sub-Total	<u>\$248,000</u>

REPLACEMENT PARTS NEEDED - PER 100 KM OF POLE-LINE -

10. Wood Poles and Cross Arms	\$ 14,490	(100 poles, 6 cross arms)
ii. Conductors/Wires	5,460	(9050 ft)
12. Splices, Sleeves, Connectors, Clamps	1,500	(296 pcs)
13. Insulators/Wireholders	900	(195 pcs)
14. Hardware	2,000	(350 pcs)
Sub-Total	<u>\$ 24,350</u> x 6.65 * = <u>162,000</u>	

*Approximate Average KM of pole-line per REC is 665, therefore 6.65 is used as multiplier

GRAND TOTAL (Maximum) \$410,000 CIF
Philippines
Port of Entry

Based on the above criteria, the following RECs are eligible to apply to participate in the systems loss reduction program and receive COMPAC-1. Twenty-six RECs have been identified in order to provide alternates in case some of the RECs identified in the first twenty are not willing or able to participate under the terms of the project.

RECs that are eligible to apply for COMPAC-1 commodities are rank-ordered as follows:

1. Bohol I
2. Cebu I
3. Cebu III
4. Zamboanga del Sur II
5. Agusan del Sur
6. South Cotabato I
7. South Cotabato II
8. Negros Occidental
9. Capiz
10. Iloilo I
11. Misamis Oriental II
12. North Cotabato
13. Maguindanao
14. Cebu II
15. Quezon I
16. Zamboanga City
17. Ilocos Norte
18. Davao del Norte
19. Davao del Sur
20. Zamboanga del Norte

If all funds allocated under the Project for COMPAC-1 commodities are not required by participating RECs included in the foregoing group, NEA may offer the COMPAC-1 package to one or more of the following RECs to the extent funds are available.

1. Zamboanga del Sur I
2. Leyte V
3. Negros Oriental II
4. Surigao del Sur I
5. Aklan
6. Misamis Oriental

These twenty-six RECs have demonstrated management capability but remain in need of technical componentry to reduce power losses. It is anticipated that these better-managed RECs and their ability to reduce line losses with the help of modest infusions of technical componentry will serve as models for the remainder.

Each REC for which the procurement is determined to be financially viable must enter into a loan agreement with NEA, as described in the Commodity Financing section, before commodities will be procured for it under the project. Each REC that will receive COMPAC-1 commodities must provide baseline data to NEA, including financial and physical performance data, before the installation of COMPAC-1 commodities.

b. Commodity Package 2 (COMPAC-2).

The second commodity package will consist initially of a limited package (COMPAC-2a) of the most critical items required to initiate a system loss reduction program for selected RECs that have potential commercial viability, but are presently in need of significant technical and managerial assistance. COMPAC-2a commodities will consist primarily of line transformers and watt hour meters, but may also include limited amounts of test equipment. The maximum CIF value of COMPAC-2a commodities provided to any REC will be \$120,000.

Up to 19 RECs selected from the NEA P500 Million Relending Program will be eligible to receive COMPAC-2a. These RECs have had management problems but are considered to be potentially viable, with the aid of significant technical and managerial assistance. An IQC contractor will assist NEA in assessing the technical equipment requirements of eligible RECs, and a local accounting firm will assess the financial viability of the proposed procurement for each eligible REC under COMPAC 2a. The financial viability assessment will take into consideration the commitment of the REC's membership for assuming obligations in connection with obtaining the commodities.

The NEA Relending Program beneficiaries listed below were selected by NEA on the basis of total NPC and NEA arrearages as of December 31, 1987:

1. Camarines Sur IV
2. Pampanga
3. Tarlac I
4. Batangas I
5. Central Pangasinan
6. Tarlac II
7. Batangas II
8. Pampanga I
9. Nueva Ecija II
10. Nueva Ecija I
11. Nueva Ecija III
12. First Laguna
13. Albay III
14. Pampanga II
15. Bataan
16. Albay II
17. Camarines Sur II
18. Camarines Sur III
19. Pampanga III

RECs receiving COMPAC-2a will be required to participate in institutional development activities under the project and be required to undertake a program to improve management efficiency and effectiveness. Those RECs that meet the performance criteria agreed upon by A.I.D. and NEA during the implementation of the project will be eligible to procure an additional package of commodities (COMPAC-2b), valued at approximately \$290,000, provided the results of the mid-project assessment indicate the project should continue.

COMPAC-2a (See Table 3) will consist primarily of line transformers and watt hour meters, deemed by the REC and its technical consultants as the most essential items for line loss reduction program. Limited amounts of test equipment, instrument transformers for metering to assure effective utilization of the transformers, and wood-pole treatment chemical applicators will also be supplied. Approximately 35 various-sized transformers and 1,100 meters will be supplied in the package. Although transformers and meters alone will not reduce line losses to the same level targeted for COMPAC-1 recipients, they will still make a measurable impact. Transformers on virtually all systems are seriously overloaded and are frequently of the wrong size for the load they should be carrying. Burnouts and failures are frequent, contributing to brownouts and substantial line losses. There is an overall shortage of watt hour meters resulting in numerous unmetered service connections billable only at minimum rates. Where there are meters, they have frequently been tampered with or are out of calibration. Meters need to be installed for all connections and those in service need to be removed from service, rechecked, calibrated (if salvagable) and placed back into service. The meters to be supplied will permit such a house metering/replacement program to be initiated.

Table 3
Typical
Commodity Procurement Package Two (COMPAC-2a)

1. Line-Type Transformers (35 units)	\$ 21,000
2. Instrument Transformers for Metering (28 units)	7,000
3. Kw/Kwh Meters (1100)	46,000
4. Test Instruments for O&M (42 units)	16,000
5. Wood-Pole Treatment Chemical- Applicators (1700 pcs)	30,000
GRAND TOTAL	<u>\$120,000</u> CIF Philippines Port of Entry

Even with the limited transformers/meters package proposed, REC managers will be able to demonstrate to the REC membership that steps are being taken to improve system efficiencies and provide better service. Under the Institutional Development component of the project, these RECs will also be given assistance to perform an operation and maintenance (O&M) survey of the complete REC system, which should facilitate future system loss reduction efforts.

As with COMPAC-1, each REC for which the procurement is determined to be financially viable must enter into a loan agreement with NEA, before commodities will be procured for it under the Project. Each REC that will receive COMPAC-2a commodities must provide baseline data to NEA, including financial and physical performance data, before the installation of COMPAC-2a commodities.

c. Commodity Package 3 (COMPAC-3).

The third commodity package (COMPAC-3) will consist of equipment for NEA to enhance its ability to service RECs. COMPAC-3 commodities will include four mobile transformers (two 5 MVA and two 10 MVA) to be regionally based for use by NEA as standby units in case of failure or maintenance and repair of REC substation equipment, and a limited amount of test equipment to enable NEA to verify and complete load forecast studies. A.I.D. financing of COMPAC-3 commodities is estimated at U.S. \$623,000, inclusive of PSA fees. NEA will not incur a loan obligation in connection with this procurement. See Table 4.

Table 4

Commodity Procurement Package Three (Compac 3)

<u>Item</u>	<u>Purpose</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total Cost</u>
5,000 KV Power Transformer 69 KV/13.1 KV	for emergency use in the event of 3-phase transformer failure in REC sub-stations	2	\$100,000	\$200,000
10,000 KVA 69 KV/13.2 KV	"	2	145,000	290,000
Transformer-Loss Test Set	For use by RECS in the three areas of the Philippines (i.e., Luzon, Visayas, & Mindanao)	3	3,500	10,500
Transformer Turns-Ratio Test Set	"	3	3,000	9,000
MEGGER, 5,000 Volt	"	3	2,500	7,500
Insulation Power Factor Tester	"	3	5,000	15,000
Oil Dielectric Strength Tester	"	6	1,500	9,000
Rubber Glove and Hot Stick Test Set	"	6	2,500	15,000
Transformer OHM Meter	"	3	2,000	6,000
Cartridges, for Filtering Equipment	"	100 pcs.	50	5,000
DC Hi-Pot Tester 0-60 KV	"	3	5,000	15,000
Vacuum Pump 2 HP	"	3	3,000	<u>9,000</u>
GRAND TOTAL				<u>\$591,000</u>

d. Other Commodity Packages.

Subject to the availability of funds to A.I.D. and to the results of the mid-project assessment described more fully in the evaluation section below, additional commodity packages will be procured, as follows:

COMPAC-2b will consist of a follow-on commodity package having a maximum CIF value of U.S. \$290,000 for each REC that received COMPAC-2a commodities, provided that the REC has participated in institutional development activities under the project, has demonstrated significant improvement in performance and is no longer managed or under the direct management supervision of NEA; and

COMPAC-4, a commodity package similar in value and composition to COMPAC-T, will be made available for up to thirty additional RECs which have demonstrated improved performance by meeting targets set by NEA. It is expected that a substantial number, but not all, of the RECs that are considered to be financially viable or have the potential to be viable will fall in this category.

e. Commodity Financing Program.

A REC that receives either COMPAC-1, COMPAC-2 or COMPAC-4 commodities must enter into a loan agreement with NEA whereby the REC incurs a peso-denominated loan obligation to NEA equivalent to the FOB U.S. dollar cost of the commodities provided to it, determined on the basis of the foreign exchange buying rate of the Central Bank of the Philippines in effect on the date of the NEA-REC Agreement. The loan agreement, inter alia, will require either the REC or NEA to provide the funds required to pay storage, handling, insurance and other costs incurred after the commodities are landed at the Philippine port of entry, including inter-island shipping, inland transportation, and installation costs. In addition, the loan agreement for RECs receiving COMPAC-2 will include a requirement that the REC participate in institutional development activities under the Project and undertake a program to improve management efficiency and effectiveness.

Loan payments will be retained by NEA. NEA will administer the loans in accordance with policies and operational procedures mutually agreed upon by NEA and AID. These policies and procedures will cover, inter-alia, collections, delinquencies and defaults. During project design, the option of formally establishing a Revolving Loan Fund as part of the project was considered and rejected, due to the high costs of maintaining such a Fund on the part of the GOP and the monitoring requirements that would be imposed on the Fund by AID.

NEA will contract with a local management/accounting firm to perform financial analyses to determine the RECs' ability to service the debt incurred based on each REC's current balance sheet and financial projections. The interest rate to the RECs will be 12 percent annually. It is expected that term of the loans will correspond to the useful life of the commodities financed, not to exceed 15 years. It is also expected that payments will be quarterly, starting one year from the effective date of the loan. A.I.D. judged the 12 percent rate to be the lowest possible rate consistent with its

policies and the role of RECs in encouraging economic and social development in rural areas. The rate should encourage financial prudence on the part of RECs, be significantly positive in real terms, and protect the inflation adjusted value of the loans.

An A.I.D. in-house mid-project review will be scheduled to be held approximately 24 months from the date of initial obligation (earlier if progress warrants) to determine (1) whether the GOP/NEA remains fully committed to achieving the commercial viability of the Philippine rural electric cooperative system; (2) progress made at the cooperative level in solving managerial and technical deficiencies; (3) efforts made at NEA in reorganization and improving managerial and administrative efficiencies; (4) status of contracting and in effecting equipment deliveries under the AID project; (5) progress made in reducing line losses; and (6) progress, if any, in attracting additional donor financing to the program.

The mid-project review should determine whether there needs to be any modification in project design, make recommendations for any necessary project amendment and determine the timing of additional fund releases. Within the 24 month period, it should be possible to determine whether project conditions precedent were met in a timely manner, whether covenants in the Agreement are being satisfied, whether proposed contracts are in place and appropriately staffed, whether training programs are operational and whether equipment deliveries and installation are on schedule. More importantly, it should be possible to assess whether the RECs participating in the program are meeting the performance targets established by NEA, based on the consultant's recommendations. While characterized as an A.I.D. in-house review, outside consultants may be brought in to assist, as appropriate.

IV. COST ESTIMATES AND FINANCIAL PLAN

A. Cost Estimates

The Rural Electrification Project has an estimated project cost of \$53,528 million over a five-year life of project period. AID contribution is estimated at \$40 million with host country participating organizations contributing \$13.528 million. The GOP will provide or cause to be provided a contribution in the form of staff services; office space and logistics support; and equipment and services in support of the rehabilitation efforts in rural electrification.

The expected allocation of the total project costs over the project life as shown in Table 4, are: technical assistance, 9.3%; training, 1.2%; commodities, 72.3%; project operations/management/monitoring, 13.4%; evaluation and provision for audit, 0.3%; and contingency, 3.5%.

Project expenditures by fiscal year are summarized in Table 5. The project will be incrementally funded beginning in FY 1988 and will have a planned Project Assistance Completion Date of September 30, 1993.

Planned A.I.D obligations for FY 1988 are estimated at \$13.886 million. The FY 1988 obligation will include a comprehensive institutional development package to NEA; installation of an improved management system and transfer of knowledge to the Rural Electric Cooperatives (RECs); and an immediate procurement of essential commodities aimed at reducing the systems losses of participating RECs. Table 6 reflects the planned A.I.D. obligations.

Table 4
Estimated Life-of-Project Budget
(\$000)

<u>PROJECT INPUT</u>	<u>AID</u>	<u>GOP</u>	<u>TOTAL</u>
1. <u>Commodities (includes PSA)</u>	<u>\$31,848</u>	<u>\$ 6,910</u>	<u>\$38,758</u>
COMPACs 1, 2 and 4	29,777	5,870	35,647
COMPAC 3	623	0	623
Computer equipment for NEA	368	500	868
Computer equipment for the RECs	1,080	540	1,620
2. <u>Technical Assistance</u>	<u>4,968</u>	<u>-</u>	<u>4,968</u>
Long term contract	2,088	-	2,088
Local accounting firm	1,200	-	1,200
Local engineering firm	900	-	900
Short term consultants	720	-	720
Procurement Specialist	60	-	60
3. <u>Training</u>	<u>320</u>	<u>304</u>	<u>624</u>
4. <u>Project Operations/Management/Monitoring</u>	<u>900</u>	<u>6,314</u>	<u>7,214</u>
5. <u>Evaluation/Provision for Audit</u>	<u>150</u>	<u>-</u>	<u>150</u>
6. <u>Contingency/Inflation</u>	<u>1,814</u>	<u>-</u>	<u>1,814</u>
TOTAL	<u>\$40,000</u>	<u>\$13,528</u>	<u>\$53,528</u>

Table 5
PROJECTION OF EXPENDITURES BY FISCAL YEAR
 (\$000)

	FY '89		FY '90		FY '91		FY '92		FY '93		TOTAL	
	AID	GOP	AID	GOP	AID	GOP	AID	GOP	AID	GOP	AID	GOP
TA	\$ 690	-	\$1,092	-	\$ 1,182	-	\$1,062	-	\$ 942	-	\$ 4,968	-
Training	20	-	100	\$ 80	100	\$ 80	50	\$ 65	50	\$ 79	320	\$ 304
Commodities	12,333	\$3,015	321	-	19,194	3,895	-	-	-	-	31,848	6,910
Evaluation/Audit	-	-	-	-	50	-	-	-	100	-	150	-
Monitoring/Data Collection	144	848	189	1,301	189	1,413	189	1,350	189	1,402	900	6,314
Contingency/Inflation	340	-	350	-	360	-	370	-	394	-	1,814	-
Totals	\$13,527	\$3,863	\$2,052	\$1,381	\$21,075	\$5,388	\$1,671	\$1,415	\$1,675	\$1,481	\$40,000	\$13,528
%	33.82	28.56	5.13	10.21	52.69	39.83	4.18	10.46	4.19	10.95	100.00	100.00

Table 6

Planned A.I.D. Obligations
(\$000)

<u>ELEMENT</u>	<u>FY '88</u>	<u>FUTURE YEARS</u>	<u>TOTAL</u>
1. Commodities	\$12,333	\$19,515	\$31,848
2. Technical Assistance	1,032	3,936	4,968
3. Training	170	150	320
4. Project Operations/Management/ Monitoring	325	575	900
5. Evaluation/Provision for Audit	0	150	150
6. Contingency/Inflation	<u>26</u>	<u>1,788</u>	<u>1,814</u>
TOTAL	<u>13,886</u>	<u>\$26,114</u>	<u>\$40,000</u>

B. Methods of Financing

Table 7 illustrates the A.I.D. planned methods of implementation and financing under the Project. It is envisioned that for technical assistance and training which will be implemented under A.I.D.-direct and/or host-country contracts, the method of financing will be by direct payments. For commodities, the preferred method of financing will be by a bank letter of commitment (Bank L/Com), due to the large volume of commodity items to be purchased from several suppliers -- which would likely produce a profusion of invoices of various amounts. This method is preferred because it is assumed that the cost to AID for handling the added administrative burden would exceed the related banking charges. Procurement services will be implemented by A.I.D.-direct contracts and financed by direct payments using the direct letter of commitment (Direct L/Com) issued by the Office of the Controller, Manila, Philippines; while services for evaluation, audit, data collection, and monitoring will be implemented by AID-direct contracts and financed by direct payments utilizing either Personal Services Contracts (PSCs) and/or Indefinite Quantity Contracts (IQCs).

Table 7
METHODS OF IMPLEMENTATION AND FINANCING
(\$000)

<u>Method of Implementation</u>	<u>Method of Financing</u>	<u>Estimated Amount</u>
TA - Host Country	Direct Payment	
TA - AID-Direct (IQCs)	Direct Payment	\$ 4,968
Training - AID-Direct Contract and/or Host Country	Direct Payment	320
Commodities - AID-Direct Contract (Procurement Services-PSA)	Bank L/Com	31,848
AID-Direct Contract	Direct Payment (Direct L/Com)	
Proj Op, Mgmt, Monitoring AID-Direct	Direct Payment	900
Evaluation, Audit AID-Direct Contract:	Direct Payment	150
Inflation and Contingency		\$ 1,814
Total		<u>\$ 40,000</u>

C. Financing Mechanism and Disbursements

Under the Project, A.I.D. will provide grant financing to NEA principally for the procurement of the form of commodities and technical assistance using the methods of financing listed in table 7. The NEA will in turn allocate these resources to the participating RECs on a sub-grant or loan basis.

In the case of loans to RECs to finance the commodity packages, the peso loan value will be based on the U.S. dollar-FOB value of the various commodity packages provided by NEA to the RECs, determined on the basis of the FX buying rate of the CB of the Philippines in effect on the date of the NEA/REC agreement. Loan repayments (principal plus interest), will be retained by NEA. It is expected that term of the loan will be in line with the useful life of the commodities financed, but not exceeding 15 years.

The commodity repayment terms may carry a 12% interest rate and an expected 8- to 15-year maturity period. These terms are in accordance with USAID Order No. 1026.11--USAID Philippines Intermediate Credit Policy--which prescribes that the interest rate should not be less than the prevailing loan rates and that loan maturities should be consistent with the useful life of the capital assets or with the financial payback period. A.I.D. judged the 12 percent rate to be the lowest possible rate consistent with its policies and the role of RECs in encouraging economic and social development in rural areas.

A.I.D. will monitor the first round of commodity loans and ensure that adequate records are maintained for review and purposes. The NEA and the participating RECs will be required to maintain separate records for this purpose.

D. Audits:

Responsibility for audits on all programs/projects of the GOP lies with the Commission on Audit (COA). COA representatives are assigned to audit and monitor the financial and procurement activities of each Department or Agency of the GOP including government-owned or controlled corporations. Responsibility for the audit of all AID programs/projects lies with the Office of the Regional Inspector General (RIG). AID will have independent audit rights under the Project Agreement. It is expected that RIG/A and/or COA will perform routine audits related to this project. A budget of \$50,000 is set aside to finance non-federal audits which may be required under this Project.

V. IMPLEMENTATION PLAN, EVALUATION AND MONITORING

A. Implementation Plan

1. Technical Assistance

With the exception of specialists to be hired under A.I.D. Indefinite Quantity Contracts (IQCs) (e.g., computer requirements analysts, procurement specifications experts, rural electric distribution experts, training consultants) it is expected that all institutional development inputs will be under host country contracts with the NEA.

Since it is intended that the commodities purchased in the United States will be provided to the RECs in special packages, it will be necessary to "tailor" the commodity packages to meet actual individual REC requirements in terms of the appropriate mix and sizes of line transformers circuit breakers and oil circuit reclosers. Therefore, an experienced IQC contractor with a background in rural electrification distribution will be contracted to carry out this work and simultaneously verify that standard U.S. Rural Electrification Administration (REA) specifications can meet the particular needs of the Philippine system. This work, which is estimated to require eight to ten person-weeks of effort, must be completed before the process of selecting a U.S. based Procurement Services Agent (PSA) can be initiated.

The long-term consulting contract will be financed through an AID Direct Letter of Commitment with invoices submitted through NEA and certified for payment by the A.I.D. Controller. Local contracts with NEA may be invoiced directly to and paid by NEA for subsequent reimbursement by A.I.D. or may be directly paid by A.I.D. upon proper NEA certification.

2. Commodity Procurement

All commodities procured under the project will have their source and origin in the United States or the Philippines. For commodities purchased in the United States, the services of a Procurement Services Agent (PSA) will be used.

For the approximately forty cooperatives to receive COMPAC-1 and COMPAC-2a, the PSA will receive itemized lists of commodities to be procured by individual RECs. The PSA will be responsible for procurement of the items, consolidating vendor deliveries and sorting them by REC, containerizing the items by REC to the extent possible, for shipment directly to the RECs, and arranging for marine insurance and ocean shipment to the international port nearest to the cooperative (i.e. Cebu, Bacolod, Davao, Cagayan de Oro, Manila). Containerized delivery will greatly reduce handling and storage costs and the administrative burden on NEA. More importantly it should also greatly reduce losses due to damage, administrative error and pilferage.

Copies of bills of lading will be sent both to the RECs and to NEA. Packing lists will be provided on an FOB basis, which can be used for loan calculation, with ocean freight and insurance separately itemized. Onward

costs of inland or inter-island shipping and insurance will be separately invoiced, as payment for such services will not be financed by AID under the Project.

NEA will monitor the arrival and clear project commodities through customs, coordinate with RECs to ensure that commodities are delivered from the port of entry to the RECs, and ensure that REC warehouse facilities are adequate and that the RECs are capable of installing the commodities upon delivery. The NEA will also be responsible for the inspection of commodities and the preparation of receiving reports. Reports of shortages and damages of project commodities will be submitted to A.I.D. which in turn will forward all documents to the PSA for filing insurance claims. The NEA will also insure prompt and proper utilization of the commodities.

B. Data Collection, Project Monitoring and Evaluation

Under the earlier AID Rural Electrification Projects, discrete focused inquiries were made into the distribution of electricity. The first of these studies was conducted by the Institute of Mindanao Culture, Xavier University, Cagayan de Oro City, and was focused on the MORESCO area. A second was undertaken by the Asian Research Organization (ARO), an affiliate of the Gallup pollsters of the U.S. That study focused on REC and non-REC areas in four provinces and included the MORESCO area, so that there would be a basis for comparing the results of the two studies. NEA subsequently developed its own questionnaires and methodology to gather data on a nationwide basis.

It is proposed that the RECs participating in the project be responsible for submitting base-line data to NEA before receiving commodities and that they be re-surveyed prior to project completion to ascertain, if possible, the impact of project support on REC collection efficiency, system loss, power outages, arrearages in payments, and the maintenance of power factor efficiencies. The data gathered will be extremely useful to end-of-project completion and impact studies and to the framers, either from AID or other donor agencies, of any follow-on assistance to the rural electrification sector. The MIS system developed and installed under the project will also provide essential evaluation data.

An assessment of project performance will be conducted in January 1991 to evaluate progress in implementing the System Loss Reduction and Institutional Development components and the ability of the individual RECs to meet agreed-upon performance targets. The assessment will also examine the extent to which the GOP/NEA and the RECs remain committed to the restructuring of the Philippine rural electrification system. Difficulties encountered will be analyzed, and a decision will be made whether or not to continue the project. Modifications of the project approach will be suggested, if necessary.

A final project completion and impact study is also contemplated. Project implementation effectiveness and problems will be assessed, including any sociopolitical impediments to efficient implementation. The evaluation will assess the improvement in the ability of the NEA to deliver program services to the RECs and the improvement in the RECs' ability to provide

dependable and affordable electrical services to REC members. The final assessment will be carried out by external consultants. A total of \$150,000 has been set aside in the project budget to carry out data collection, audit and evaluation studies.

The A.I.D. office responsible for project management and monitoring will be the Office of Capital Development/Division of Energy, Infrastructure and Engineering (OCD/EIE). This Division currently has three USDH, one PSC and sixteen FSN staff. One USDH will be named Project Officer for the project, and will be expected to devote roughly 20% of his time to managing the implementation of the project, and one FSN with a background in energy development will devote roughly 60% of her time to the project. Given current and projected workloads and expertise, however, inclusion of the project within the Mission's portfolio will require that OCD/EIE have two additional PSC staff assigned to the project. OCD/EIE currently has operational and monitoring responsibility for a very large ESF portfolio of rural infrastructure projects; roads, bridges, schools, markets, water and wastewater projects, etc., and its efforts and staffing are so concentrated. There are no electrical engineers on the staff or persons with experience in implementation of a rural electrical distribution program. Therefore, two long-term Personal Services Contractors (PSCs), one for each component of the project, are proposed and are included in the budget.

Below is an Implementation Schedule indicating targeted dates for implementation milestones.

IMPLEMENTATION SCHEDULE

<u>Activity</u>	<u>Date</u>
Project Authorization	September 1988
Project Obligation	September 1988
Advertisement for Mission PSCs	October 1988
Initial Conditions Precedent Met	October 1988
Selection of IQC Contractor(s) Initiated	October 1988
IQC Consultant(s) Arrive	November 1988
Issuance of Standard Form Loan Agreement	December 1988
CBD Advertisement for Expatriate Consulting Firm	December 1988
Mission PSC Contractors Selected	December 1988
IQC Contractor Work Completed	January 1989
CBD Advertisement for PSA	February 1989
Mission PSCs Arrive	February 1989
Short-Listing of Consulting Firms/Issuance of RFTP	March 1989
Conditions Precedent to Procurement Met	March 1989
First annual training plan completed	March 1989
Initiate contract for NEA training support	April 1989
PSA Contract Signed	April 1989
Commodity Procurement for RECs Initiated	May 1989
NEA training commences	May 1989

<u>Activity</u>	<u>Date</u>
Consulting Firms RFTPs, Received/Top Firm Identified	June 1989
Negotiations Commence with Consulting Firm	July 1989
Consulting Contract Signed	August 1989
Long-Term Advisers Arrive	September 1989
Initial Local Engineering & Acctg/Mgmt Contracts Signed	November 1989
COMPAC 1, 2a, 3 and Computer Equipment Deliveries	December 1989
Second annual training plan completed	March 1990
COMPACS Installed	June 1990
Computers Delivered	June 1990
Mid-term Process Evaluation Initiated	July 1990
Contingent Upon Decision to Proceed:	
Advertise in CBD for PSA	Dec. 1990
PSA selected	Feb. 1991
COMPAC 2b, 4 Procurements initiated	March 1991
Third annual training plan completed	March 1991
Commodities delivered	Dec. 1991
Fourth annual training plan completed	March 1992
Commodities installed	June 1992
Training activities completed	March 1993
Project Impact Evaluation Initiated	May 1993
Project Assistance Completion Date	September 1993

VI. SUMMARIES OF ANALYSES

A. Summary of Administrative Analysis

The Administrative Analysis provides the rationale for the proposed organizational structure, and assesses the implementing agency's capability to manage the project. RECs manage their own operations, but are subject to NEA rules. All RECs must register as corporations with NEA. NEA will provide institutional, technical, financial, regulatory, supervisory and development services to RECs. NEA will assist the RECs with: the implementation of managerial, administrative, legal and training services for RECs; supervision of construction of facilities; procurement of rural electrification materials; regulation of rates for RECs; assistance on financial operations of RECs and the development of alternative energy projects for RECs.

The structure of the REC is comprised of a Board of Directors, a General Manager and management staff and employees. The Board of Directors formulates policy-level decisions, regulations and plans for the operation of the cooperatives. The General Manager (GM) is in charge of management of daily operations, and management staff and employees assist the GM to implement programs and projects of the REC. Through this organizational structure the RECs have already developed capabilities to design, construct, operate and maintain rural electrification systems. Oversight, training and guidance is provided by NEA.

Due to the rapid expansion of the REC service areas since 1980, institution building within the cooperatives and NEA has not been adequately addressed. Responsibilities unrelated to rural electrification have diminished NEA's ability to focus on its objective to improve distribution of electricity to rural areas. The Rural Electrification Project aims to improve institutional and financial viability. In line with the GOP's reorganization/streamlining program, NEA submitted a proposed reorganization structure to the Department of Budget and Management in July 1988 to streamline operations. The plan will be fully implemented by September 8, 1988. Under the new organizational structure, the NEA Development Department is decentralized into separate operations and evaluations components. Regional electrification managers (REMs) will oversee REC operations on a regional basis and represent NEA in REC board meetings and submit monthly progress reports of specific problems of RECs to NEA. Annex G contains a detailed Administrative Analysis.

An assessment of NEA's host country contracting capability will be made by AID staff or by an accounting or consulting firm. If the assessment will be made by the latter funds will be sourced from the evaluation and audit budget line item.

B. Summary of Environmental Analysis

The Environmental Analysis assesses the environmental impact of the Rural Electrification Project, as well as identifying the beneficiaries of the project and the possibility of labor displacement. The Rural Electrification Project will have minimal direct impact on the environment because the focus

is on systems upgrading rather than expansion. In fact, the project will have a positive impact on the overall quality of rural life, as well as making the systems safer to operate through the administration of training courses. Improved power service in rural areas will not only distribute electricity more efficiently, but will also benefit employment and sanitation conditions in rural communities.

The direct impact is limited to the clearing of the environment for electric distribution lines and procurement of poles. Installation of systems will necessarily require a small disturbance of soil. The procurement of 48,000 utility poles may result in increased harvesting of forest products and a subsequent loss of forest coverage. Labor displacement will occur with the streamlining of NEA and the RECs, resulting in the loss of more than 2,000 to 3,000 jobs nationwide over a three year period. Annex J contains a detailed Environmental Analysis.

C. Summary of Technical Analysis

The Technical Analysis discusses the rationale for the Rural Electrification Program in relationship to the proposed systems reduction loss program and financial management information systems improvements. Since the project is concentrating on upgrading existing systems, technical capacity or feasibility is not at issue. The engineering design, construction, operation and techniques for maintaining the distribution systems will remain the same under the Rural Electrification Project. Rather, improving existing RECs and service areas to reduce line losses and power interruptions and providing the expertise necessary to manage the cooperatives, collect revenues and efficiently manage operations and maintenance will be focused on in the project. Hence, project outputs will be measured in terms of improved operating efficiency rather than physical growth.

A very serious problem for the RECs is the energy lost in the distribution system due to technical and administrative or non-technical losses, such as the lack of spare and replacement parts and line hardware. Line losses of up to 50% have occurred because of lack of spare and replacement parts and line hardware. A.I.D. plans to reduce system losses through the immediate procurement and provision of essential commodities to selected RECs which have been experiencing line losses. The goal is to reduce REC system losses to 15% or below.

Technical improvements will also include a comprehensive institutional development package aimed at managerial improvements within the NEA, including the installation of an improved financial management information system and a concomitant transfer of knowledge to the RECs. The objective of the financial management information system will be to take NEA beyond the data processing stage. This system will be designed to support management planning and decision-making, and will be able to access all of the information on NEA's data base to permit ad hoc reporting. Improving the financial management information system will also result in better controls and cash management through standardized billing, reduced manpower, reduced costs compared to non-computerized methods and more meaningful reports for management. Annex F contains a detailed Technical Analysis.

D. Summary of Social Soundness Analysis

The Social Soundness Analysis identifies the social dimensions of the Rural Electrification Project, and assesses the sociocultural feasibility of the project, the likelihood of spread effect and the social consequences and benefits of implementing the project. The analysis outlines the importance of ensuring the spread and sustainability of project benefits.

The analysis indicates that rehabilitation efforts will generate enough support to outweigh any potential resistance from some sectors. NEA's target objective is total electrification of the rural countryside by 1990. In addition to providing more reliable electrical service, there should also be an overall increase in opportunities for rural development, agro-industry and employment. However, the rehabilitation program will incur some social costs in the process. The streamlining and rehabilitation of NEA and the RECs will result in unemployment for 2,000 to 3,000 employees due to the streamlining of operations and fewer privileges for others. The possibility of increasing political resistance against the NEA also needs to be taken into consideration.

The importance of clarifying the role of rural electric cooperatives in the context of the overall rural energy development plan is necessary to sustain socioeconomic benefits and diffuse benefits beyond the initial project target population. Although the selection of "model cooperatives" is expected to generate positive reactions and cooperation on the part of management and staff, the project must dispel the misconception that rehabilitation will result in the stoppage of electric service in certain areas or that being selected as a "model cooperative" is an indictment of the cooperative's performance. The expected long-term benefits of the rehabilitation program are outlined as well as an assessment of rural electrification's impact on poverty. Annex I contains a detailed Social Soundness Analysis.

E. Summary of the Financial Analysis of the Commodity Loan Packages

The financial analysis contained in Annex H determines whether the financial debt assumed by the RECs in obtaining the commodity loan packages would be serviceable from the expected revenues that could be derived from the savings in systems losses, under various assumptions of interest rate, inflation and loss reduction.

F. Summary of Economic Analysis

The economic analysis identifies three sources of economic benefits: reduction in system losses from what they would be without the Project, reduction in social costs of power outages, and benefits of general development encouraged by the availability of more reliable power. A quantitative analysis of the first source of benefits estimates the minimum reduction in system losses necessary to justify economically the project. Calculations show that slightly more than a 25 percent reduction in system losses would justify the project, i.e. provide a Net Present Value (NPV) that is positive, a benefit cost ratio (BCR) that exceeds 1, and an internal rate of return (IRR) that exceeds the established minimum return of 15 percent. Achievement of the Project's target of reducing losses to an average below 15 percent of total power purchased by participating RECs (about 70 in all) should exceed the minimum reduction needed. See Annex K for details.

VII. COVENANTS, CONDITIONS PRECEDENT, WAIVERS AND STATUS OF NEGOTIATIONS

A. Conditions Precedent to Disbursements

In addition to the standard initial Conditions Precedent (CPs), the following CPs are proposed:

Prior to the disbursement for commodities for Compacs 1, 2a and 3:

- That the Grantee will provide A.I.D. with a statement of the policies and operational procedures to be followed in the commodity financing program.

Prior to the disbursement for commodities for Compacs 1 and 2a:

a) the Grantee shall provide A.I.D. with a standard form of loan agreement between NEA and RECs eligible to receive commodities.

b) evidence that the commodities to be procured for the RECs conform to the recommendations of the technical equipment requirements contractor.

c) evidence of the financial viability of the procurement based on the assessment of a local accounting firm.

d) evidence that the REC and NEA have executed a loan agreement in the standard form approved by A.I.D. and the Grantee.

Prior to the disbursement for commodities for Compac 3:

- That the grantee shall provide to A.I.D. an executed contract between NEA and a long-term technical assistance contractor to provide expertise in finance, accounting, management and institutional development and in electrical distribution engineering.

Conditions precedent to disbursement for Compacs 2b and 4 will be determined on the basis of the mid-term evaluation and reflected in an amendment to the Project Agreement providing incremental funding.



REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY
NEDA sa Pasig, Amber Avenue Pasig, Metro Manila

ANNEX A

MAY 19 1988

Cable Address: NEDAPHIL
P.O. Box 419, Greenhills
Tels. 673-50-31 to 50

Mr. Frederick W. Schieck
Mission Director
USAID Ramon Magsaysay Bldg.
Roxas Boulevard, Manila

Attention: Mr. Keith Brown
Chief, Office of Capital
Development

Dear Director Schieck:

We are forwarding GOF's comments on the draft Project Identification Document (PID) for the proposed Rural Electrification Project. The comments were as a result of discussions between NEDA and NEA.

In a subsequent meeting among NEDA, NEA and USAID held 4 May 1988, we were informed by USAID that there has been some changes in the PID's design as a result of further work by USAID's Price-Waterhouse consultant and these changes are principally in the areas of technical assistance to NEA and the concept of a revolving loan fund for the RECs. Based on this meeting and the previous one, we wish to reiterate our views and concerns as follows:

1. Activities to be undertaken at the early stages of the project should address immediate service improvements of priority areas for electrification but at the same time, these activities should be confined to those that would not be affected by outstanding policy issues (e.g., price structure of NPC v.s. NEA, direct connection by industrial clients, privatization).
2. Accordingly, we agree that the selection of RECs for the initial component (Systems Loss Reduction Program) should be based mainly on viability considerations. However, if selection would result to a reduced number out of the 15 to 20 RECs that have been initially identified, a fair distribution of viable RECs among different regions would be desirable.
3. Prior to nationwide implementation of rehabilitation (Component III) full evaluation of Component I and the pilot rehabilitation under Component II should be undertaken. We anticipate that such evaluation would be undertaken at some point when the intervention has made some meaningful impact to avoid getting premature results and conclusions.

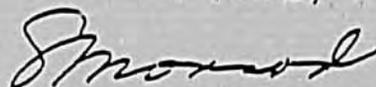
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4. Regarding the proposed Revolving Fund for relending to RECs, we agree in principle that relending should go by the market price of credit. However, a scheme could be thought of which allows for easier terms at the early phases of rehabilitation but that this should be tied to performance targets.
5. The subject of loan pricing should be further studied and may be a matter for policy discussion. We also suggest that the mechanics for disbursement and accounting be discussed with DEM and the Bureau of Treasury if NEA is to manage the Fund.
6. In the case of RECs which might be placed under NEA management/supervision, this situation should be time-bound, while privatization is explored.
7. Finally, while we see a need for a full-time management team for the project headed by the Project Director, we hesitate to agree that this team should be composed of expatriates (per FID). What is important is that this team and the Project Director are qualified. NEA should be in this management team.

We understand that the Project Paper will be submitted to us together with the proposed project agreement. We anticipate that our comments will have been taken into account.

Thank you and warm regards. -

Very truly yours,



SOLITA COLLÁS-MONSOD
Secretary Socio-Economic Planning

cc: Mr. Gary Imhoff
Project Design and Implementation, OGD
USAID

Administrator Rodrigo Cabrera
National Electrification Administration

Director Jesus M. Sunga
Infrastructure Staff

Asst. Director Margarita R. Songco
Trade, Industry & Utilities Staff



REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY

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Mr. Frederick W. Schieck
Mission Director
USAID, Manila

Attention: Mr. William Oliver
Program Office

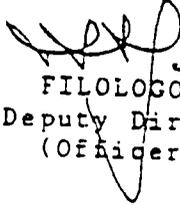
Dear Director Schieck:

We are forwarding for USAID's consideration, the proposed terms of reference (TOR) prepared by the National Electrification Administration (NEA) for the Pilot Rural Electrification Rehabilitation Project which will constitute the second component of the Rural Electrification Project being lined up for USAID assistance in US fiscal year 1988. We understand that the NEA has undertaken close consultations with representatives of your Energy Development Division/ORAD in the preparation of the aforesaid TOR.

We also wish to inform you that the Project Identification Document (PID) for the Rural Electrification Project is presently being reviewed by this Office and the NEA. We will be mounting a meeting with your representatives to discuss comments on the aforesaid TOR and PID shortly.

Thank you and regards.

Very truly yours,


FILOLOGO PANTE, JR.
Deputy Director-General
(Officer-in-Charge)

Div	Exec	Adm	Fin
OD			✓
E			
PE			
RLA	✓	✓	✓
PC	✓	✓	✓
TD			
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PER			
CSD			
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GSO			
TRV			
CO			
DMD			
OCD	✓	✓	✓
ORAD			
OPHN			
PERG			
FIG/AI			
FIG/II			
IR			
DUE DATE			
	5-3-88		

cc: Ms. B. Silva
USAID/ORAD

Mr. C. Imhoff
USAID/OCD

Acting Administrator R. Cabrera
NEA

ACTION TAKEN	
NAN	_____
Type	_____
Date	_____

REPUBLIC OF THE PHILIPPINES

National Electrification Administration



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9 March 1988

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ACT

Mr. Filologo Pante, Jr.
Assistant Director-General
National Economic and Development Authority
Pasig, Metro Manila

S i r :

Please be informed that we have continued our discussions with the USAID on the implementation of our proposed rehabilitation of a pilot region. We were made to understand that pending finalization of the rehab plan on a pilot basis, we may be able to bring in commodities earlier to be used in the system loss reduction effort. This first component of the USAID assistance will provide NEA with standards on the extent of possible line loss reduction and required materials and commodities to be procured before embarking on the pilot region project being proposed.

Meanwhile, we are resubmitting the NEA proposed rehabilitation project with the necessary modifications as suggested in our discussion with your staff. This will in effect be the second component of the USAID package and if successful, rehabilitation of RECs will be implemented on a nationwide basis.

Thank you and we look forward for your usual assistance and support in the implementation of the rural electrification program of our government.

Very truly yours,

RCDRIGO E. CABRERA
Acting Administrator

UNCLASSIFIED
Department of State

OUTGOING
TELEGRAM

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PDPH-01 PPH-01 CI-01 SIDS-01 AMNS-01 PPH-01 AXIS-01
STEL-01 STPI-01 STEH-01 SASI-01 KELL-01 AUEP-01 ANAA-01
/041 AE

INFO: LOV-01 EP-01 EAP-00 /000

DRAFTED BY: AID/ANE/PD/LA JHUSSEBAUN/JATEHWANI JKA
APPROVED BY: AID/AA/ANE/JOBLOCI
AID/DA/ANE/JHOREN
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TO AMEMBASSY MANILA PRIORITY

UNCLAS STATE 067307

AIDAC

L.C. 12358. N/A
TAGS: N/A

SUBJECT: REVIEW OF RURAL ELECTRIFICATION PROJECT

1. SUMMARY: PROGRAM VICE REVIEW OF RURAL ELECTRIFICATION PROJECT FEBRUARY 81 APPROVED THE PID FOR THE MISSION TO DEVELOP THE PP AND LAUNCH THE PROJECT. REVIEWERS COMMENDED THE MISSION ON AN EXCELLENT PID. REVIEW COMMENTS BELOW END SUMMARY.

2. MISSION DIRECTOR SCHIEFF PRESENTED THIS PROJECT PROPOSAL AS RESULT OF WZICA-PRICE WATERHOUSE STUDY OF RURAL ELECTRIC COOPERATIVES (RECS). REMEDIAL ACTION TO BE FINANCED INITIALLY WOULD PRINCIPALLY ADDRESS PROBLEMS THE STUDY FOUND COULD BE RESOLVED WITHOUT FURTHER REFORM/REDESIGN OF OVERALL REC STRUCTURE AND OPERATING CIRCUMSTANCES. MR. SCHIEFF ALSO INDICATED THAT THERE IS A MORE COOPERATIVE ATMOSPHERE IN THE RELATIONSHIP OF THE NATIONAL POWER CORPORATION WITH THE NATIONAL ELECTRIFICATION ADMINISTRATION THAN UNDER THE MARCOS GOVERNMENT.

3. REVIEWERS NOTED THAT THE NEED FOR A NUMBER OF POLICY REFORMS IN THE REC SECTOR WAS RAISED AS A KEY ISSUE DURING LAST YEAR'S REVIEW OF THE RURAL INFRASTRUCTURE FUND PID. SUCH REFORMS INCLUDE: NATIONALIZATION OF THE

STRUCTURE OF RURAL COOPS (GEOGRAPHIC LAYOUT, COLLECTION POLICIES, INVOLVEMENT IN NON-ELECTRIC SERVICES, ETC.) AS WELL AS DEALING WITH THE HEAVY DEBT BURDEN ON THE WHOLE REC SYSTEM. HELPING ASSURE THE TRANSFER OF REC INDUSTRIAL ELECTRICITY DISTRIBUTION FUNCTIONS TO THE COOPERATIVES OR OTHERWISE ASSURING THAT COOPERATIVES SHARE IN INDUSTRIAL ELECTRICITY REVENUE, THE DEVELOPMENT OF MORE ECONOMICALLY VIABLE-SIZED COOP AREAS, AND THE STIMULATION OF PRODUCTIVE USES THROUGH COORDINATION WITH OTHER SERVICES (E.G. CREDIT) ARE ALL APPROPRIATE AREAS OF SUPPORT UNDER THE PROJECT. WE PARTICULARLY ENCOURAGE THE MISSION TO LOOK FOR CREATIVE WAYS TO DEAL WITH REC DEBT AND CAPITALIZATION ISSUES SINCE THESE WILL BE CRITICAL TO THE REC'S LONG TERM VIABILITY. WE WOULD SUPPORT USE OF A.I.D. RESOURCES TO HELP RESTRUCTURE REC DEBT IN CONJUNCTION WITH APPROPRIATE POLICY AND INSTITUTIONAL SUPPORT TO HELP RATIONALIZE THE OPERATING

(ENVIRONMENT FOR RECS. IN GENERAL THE COOPS HAVE TO SERVE AS ELECTRIC DISTRIBUTION UTILITIES RATHER THAN AS ENTITIES WITH EXPLICIT AND BURDENSOME SOCIAL AND POLITICAL AGENDA AS UNDER THE FORMER GOVERNMENT). THIS APPROACH FAVORS ENCOURAGING AS MUCH INDEPENDENCE AS POSSIBLE TO RECS IN ESTABLISHING LOCAL POLICY APPROPRIATE TO THEIR INDIVIDUAL SITUATIONS. DIRECTOR SCHIEFF CONFIRMED THE MISSION'S INTENTION TO MAKE THE PRICE/WATERHOUSE STUDIES IMPROVEMENTS AND POLICY RECOMMENDATIONS IN THESE REGARDS THE "CENTERPIECE" OF THE PROJECT.

4. ANOTHER AREA OF CONCERN WAS THE IMPACT THAT POWER DISTRIBUTION ISSUES SUCH AS EMERGENCY COSTS AND TARIFF RATES WILL HAVE ON THE PROGRAM. IT WAS NOTED THAT ELECTRICITY COSTS ARE THE HIGHEST IN ASIAN. THERE WAS PARTICULAR CONCERN THAT RATES AT WHICH RECS BUY POWER WILL AFFECT THE FINANCIAL VIABILITY OF THE REC IF FULL COSTS CANNOT BE PASSED ON. THEREFORE, THE PROJECT MUST CONSIDER THE RATE STRUCTURE TO DETERMINE THE VIABILITY OF ANY INTERVENTION WE PROPOSE. HOWEVER, THE PROJECT MUST INSURE THAT OUR EFFORTS UNDER THE PROJECT ARE CONSISTENT WITH JRD AND/OR AID INITIATIVES TO DEAL WITH POWER SECTOR ISSUES. IT WAS CONCLUDED THAT WE SHOULD MAKE EVERY REASONABLE EFFORT TO FURTHER THE POLICY DIALOGUE ON THESE ISSUES WITHOUT OVERLY BURDENING THE MODEST OBJECTIVES OF THIS PROJECT. THE MISSION SHOULD DISCUSS WITH JRD AND AID HOW WE MAY BEST SUPPORT THEM ON THESE ISSUES.

5. REGARDING THE IMPLEMENTATION APPROACH PROPOSED UNDER THE PROJECT, CONCERN WAS EXPRESSED THAT THE PREPARATION AND IMPLEMENTATION TIMING FOR LINE LOSS REDUCTION ACTIVITIES UNDER COMPONENT 1 SEEMED OVERLY OPTIMISTIC.

MORE INFORMATION APPEARS TO BE NEEDED ON THE LINE LOSSES, INCLUDING WHERE AND HOW THEY OCCUR. A SHORT INVESTIGATIVE TASK UNDER AN IEC CONTRACT WHILE THE MISSION IS WRITING THE PP WOULD ACCELERATE THE ACTIVITY'S START-UP. (IF THIS REGARD, STAFF NOTES THAT IT WAS CENTRALLY FUNDED CONTRACT WITH NAGLER, BAILLY AND CO AVAILABLE FOR BUY-IN THAT SPECIFICALLY INCLUDES PROVISION FOR LINE LOSS ANALYSIS. OTHER POTENTIAL CONTRACT MECHANISMS ARE ALSO AVAILABLE FROM ANE/TR. PLEASE ADVISE IF YOU WOULD LIKE ADDITIONAL INFORMATION ON ANY OF THESE.) THERE WAS ALSO CONCERN THAT COMMODITY PROCUREMENT UNDER COMPONENT 1 SHOULD BE LIMITED.

6. FOR FEEDBACK ON RECENT RURAL ELECTRIFICATION EFFORTS BY AID, SUGGEST THE MISSION CONTACT USAID/PAKISTAN (DAVE JOHNSTON AND JOHN MORGAN IN THE ENERGY AND ENVIRONMENT OFFICE) CONCERNING THEIR CURRENT SYSTEM REHABILITATION AND DISTRIBUTION INSTITUTIONAL REFORM ACTIVITIES.

7. DISCUSSIONS BETWEEN THE MISSION DIRECTOR AND AID BUREAU STAFF PROVIDED SOME OPTIONS FOR PROJECT DESIGN WITH TOT/CONTRACTOR SUPPORT. BUREAU WILL MAKE EVERY EFFORT TO BE RESPONSIVE TO MISSIONS' NEEDS AT YOUR REQUEST. WHITEHEAD

5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to all projects. Part B applies to projects funded from specific sources only: B(1) applies to all projects funded with Development Assistance; B(2) applies to projects funded with Development Assistance loans; and B(3) applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

A. GENERAL CRITERIA FOR PROJECT

1. FY 1988 Continuing Resolution Sec. 523; FAA Sec. 634A. If money is sought to obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified? Yes, per STATE 276905, the Technical Notification submitted to Congress expired without objection Aug. 23, 1988.
2. FAA Sec. 611(a)(1). Prior to an obligation in excess of \$500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U.S. of the assistance? Yes.
3. FAA Sec. 611(a)(2). If legislative action is required within recipient country, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance? N/A

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4. FAA Sec. 611(b); FY 1988 Continuing Resolution Sec. 501. If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.) N/A
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively? Yes.
6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. Multilateral donors are focusing on system expansion; whereas AID is focusing on system rehabilitation.
7. FAA Sec. 601(a). Information and conclusions on whether projects will encourage efforts of the country to:
(a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.
(a) No
(b) Yes
(c) The project supports the strengthening of rural cooperatives.
(d) No
(e) Yes
(f) No
- FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). The U.S. will be a major supplier of services and commodities.
9. FAA Secs. 612(b), 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars. The GOP and the rural electric cooperatives will supply at least 25% of the project's cost, in cash and in kind. U.S. does not own local currency available for this project.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? No.
11. FY 1988 Continuing Resolution Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? N/A
12. FY 1988 Continuing Resolution Sec. 553. Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel? No.
13. FAA Sec. 119(c)(4)-(6). Will the assistance (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas? (a) No.
(b) No.
(c) No.
(d) No.

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)? N/A
15. FY 1988 Continuing Resolution. If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government? N/A
16. FY Continuing Resolution Sec. 541. If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? N/A
17. FY 1988 Continuing Resolution Sec. 514. If funds are being obligated under an appropriation account to which they were not appropriated, has prior approval of the Appropriations Committees of Congress been obtained? N/A
18. FY Continuing Resolution Sec. 515. If deob/reob authority is sought to be exercised in the provision of assistance, are the funds being obligated for the same general purpose, and for countries within the same general region as originally obligated, and have the Appropriations Committees of both Houses of Congress been properly notified? Yes
19. State Authorization Sec. 139 (as interpreted by conference report). Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision). Statutory reporting requirements will be met immediately upon execution of agreement.

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B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

- a. FY 1988 Continuing Resolution Sec. 552 (as interpreted by conference report). If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities (a) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (b) in support of research that is intended primarily to benefit U.S. producers? N/A
- b. FAA Secs. 102(b), 111, 113, 281(a). Describe extent to which activity will (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and (a) Project directly supports improvement of rural electric services; (b) Project directly supports cooperatives; (c) Project supports self-help efforts of GOP in rural electric distribution sector; (d) Rural electrification lead to increased employment opportunities for women and a reduction in the time needed to perform household tasks.

insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries

- c. FAA Secs. 103, 103A, 104, 105, 106, 120-21. Does the project fit the criteria for the source of funds (functional account) being used? Yes. -
- d. FAA Sec. 107. Is emphasis placed on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)? No.
- e. FAA Secs. 110, 124(d). Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)? Yes.
- f. FAA Sec. 128(b). If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority? Yes.

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.

Project directly recognizes and responds to the Philippine peoples needs, desires and capacities' uses local resources; and supports skills training.

h. FY 1988 Continuing Resolution Sec. 538. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

No; no; no.

Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?

Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?

i. FY 1988 Continuing Resolution. Is the assistance being made available to any organization or program which has been determined to support or participate in the management of a program of coercive abortion or involuntary sterilization?

No; n/a.

If assistance is from the population functional account, are any of the funds to be made available to voluntary family planning projects which do not offer, either directly or through referral to or information about access to, a broad range of family planning methods and services?

- j. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? Yes.
- k. FY 1988 Continuing Resolution. What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 20 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)? Disadvantaged enterprises will be used to the maximum extent possible for evaluation activities.
- l. FAA Sec. 118(c). Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (a) stress the importance of conserving and sustainably managing forest resources; (b) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (c) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (d) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (e) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared Yes
No.
(a) No.
(b) No.
(c) No.
(d) No.
(e) No.
(f) No.
(g) No.
(h) No.
(i) No.
(j) No.
(k) No.

or degraded; (f) conserve forested watersheds and rehabilitate those which have been deforested; (g) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (h) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (i) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (j) seek to increase the awareness of U.S. government agencies and other donors of the immediate and long-term value of tropical forests; and (k) utilize the resources and abilities of all relevant U.S. government agencies?

m FAA Sec. 118(c)(13). If the assistance will support a program or project significantly affecting tropical forests (including projects involving the planting of exotic plant species), will the program or project (a) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land, and (b) take full account of the environmental impacts of the proposed activities on biological diversity?

N/A

- n. FAA Sec. 118(c)(14). Will assistance be used for (a) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; or (b) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas? (a) No.
(b) No.
- o. FAA Sec. 118(c)(15). Will assistance be used for (a) activities which would result in the conversion of forest lands to the rearing of livestock; (b) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands; (c) the colonization of forest lands; or (d) the construction of dams or other water control structures which flood relatively undegraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development? N/A
- p. FY 1988 Continuing Resolution If assistance will come from the Sub-Saharan Africa DA account, is it (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (b) being provided in N/A

accordance with the policies contained in section 102 of the FAA; (c) being provided, when consistent with the objectives of such assistance, through African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa; (d) being used to help overcome shorter-term constraints to long-term development, to promote reform of sectoral economic policies, to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economies, to support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisted policy reforms, the need to protect vulnerable groups; (e) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks, to maintain and restore the natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside the formal educational system and to improve primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?

2. Development Assistance Project Criteria
(Loans Only)

N/A

- a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest.
- b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest?
- c. FY 1988 Continuing Resolution. If for a loan to a private sector institution from funds made available to carry out the provisions of FAA Sections 103 through 106, will loan be provided, to the maximum extent practicable, at or near the prevailing interest rate paid on Treasury obligations of similar maturity at the time of obligating such funds?
- d. FAA Sec. 122(b). Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities?

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3. Economic Support Fund Project Criteria

N/A

- a. FAA Sec. 531(a). Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA?
- b. FAA Sec. 531(e). Will this assistance be used for military or paramilitary purposes?
- c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

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5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction and (C) Other Restrictions.

A. PROCUREMENT

1. FAA Sec. 602(a). Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? Yes.

2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him? Yes.

- FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company? N/A

- FAA Sec. 604(e) ISDCA of 1980 Sec. 705(a). If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.) N/A

5. FAA Sec. 604(g). Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those No.

countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.)

6. FAA Sec. 603. Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates? No.
7. FAA Sec. 621(a). If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? Yes.
8. International Air Transportation Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available? Yes.
9. FY 1988 Continuing Resolution Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? Yes.
10. FY 1988 Continuing Resolution Sec. 524. If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)? Yes.

B. CONSTRUCTION

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services be used? Yes.
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?
3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP); or does assistance have the express approval of Congress?

OTHER RESTRICTIONS:

1. FAA Sec. 122(b). If development loan repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter? N/A
2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? N/A
3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? Yes.

4. Will arrangements preclude use of financing:

- a. FAA Sec. 104(f); FY 1987 Continuing Resolution Secs. 525, 538. (1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; or (4) to lobby for abortion? Yes.
- b. FAA Sec. 483 To make reimbursements, in the form of cash payments to persons whose illicit drug crops are eradicated? Yes.
- c. FAA Sec. 620(g). To compensate owners for expropriated or nationalized property; except to compensate foreign nationals in accordance with a land reform program certified by the President? Yes.
- d. FAA Sec. 660. To provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? Yes.
- e. FAA Sec. 662. For CIA activities? Yes.
- f. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? Yes.

- g. FY 1988 Continuing Resolution Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel? Yes.
- h. FY 1988 Continuing Resolution Sec. 505. To pay U.N. assessments, arrearages or dues? Yes.
- i. FY 1988 Continuing Resolution Sec. 506. To carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)? Yes.
- j. FY 1988 Continuing Resolution Sec. 510. To finance the export of nuclear equipment, fuel or technology? Yes.
- k. FY 1988 Continuing Resolution Sec. 511. For the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? Yes..
- l. FY 1988 Continuing Resolution Sec 516; State Authorization Sec 109 To be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress? Yes..

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK**

Project Title & Number: RURAL ELECTRIFICATION PROJECT (492-0429)

Life of Project:
From FY 1988 to FY 1993
Total U. S. Funding \$40,000,000
Date Prepared: September 6, 1988

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																												
<p>Program or Sector Goal: The broader objective to which this project contributes: (A-1)</p> <p>To increase the reliability of electric power service in the rural areas of the Philippines.</p>	<p>Measures of Goal Achievement: (A-2)</p> <p>Reliability of service increased; fewer service interruptions experienced.</p>	<p>(A-3)</p> <p>Impact studies; REC and MEA records; systems studies of RECs.</p>	<p>Assumptions for achieving goal targets: (A-4)</p> <p>It is necessary to put RE sector on an overall sounder financial basis in order for power service to be more reliable.</p>																												
<p>Project Purpose: (B-1)</p> <p>To achieve commercial viability of selected Rural Electric Cooperatives (RECs) by addressing institutional, policy and technical weaknesses of the REC system.</p>	<p>Conditions that will indicate purpose has been achieved: End-of-Project status: (B-2)</p> <p>A majority of the RECs participating in the project will be commercially viable distributors of electric power in their service areas; and all participating RECs will demonstrate:</p> <ul style="list-style-type: none"> - increased collection efficiency. - decreased operating expense per kWh. - reduced power outages. 	<p>(B-3)</p> <ul style="list-style-type: none"> - Baseline data and evaluation findings. - REC and MEA records. 	<p>Assumptions for achieving purpose: (B-4)</p> <ul style="list-style-type: none"> - Automation leads to greater efficiency. - Institution-building is necessary for RECs to achieve commercial and operational viability. - MEA's reorganization and decentralization of functions leads to improved support of REC system. - Trained personnel remain with the RECs. - MEA and NPC agreement on sharing of revenues derived from electrical sales to industrial users is concluded. 																												
<p>Project Outputs: (C-1)</p> <ul style="list-style-type: none"> - MEA functions more effectively; - Participating RECs demonstrate improved financial management and decreased system losses; and - Feasibility of Regional Service Centers assessed. 	<p>Magnitude of outputs: (C-2)</p> <ul style="list-style-type: none"> - MEA Inventory Control, Loan Administration, Accounting and Financial Management Information systems improved; overall number of MEA functions reduced, to concentrate on more effectively serving the RECs. - REC collection efficiency increased to an average of 95% of total accounts received; system losses reduced to an average of 15%; and - one feasibility assessment conducted. 	<p>(C-3)</p> <ul style="list-style-type: none"> - A.I.D. and GOP monitoring and evaluations. - Impact studies. - Quarterly progress reports 	<p>Assumptions for achieving outputs: (C-4)</p> <ul style="list-style-type: none"> - RECs and MEA participate as planned. - Qualified staff can be identified to participate in training. - Improved financial management capability leads to increased collection efficiency. - MEA reorganization implemented as planned. - Acquisition of commodities enables RECs to reduce system losses. - Working relationship between MEA and the RECs exists. - REC's current technical capacity is sufficient for them to absorb proposed Institutional Development assistance. 																												
<p>Project Inputs: (D-1)</p> <p>Institutional Development Assistance</p> <ul style="list-style-type: none"> - technical assistance - training - MIS improvements - study on maintenance and repair options <p>Loss Reduction Program</p> <ul style="list-style-type: none"> • Compac 1 for 20 RECS. • Compac 2a for 19 RECS/Compac 2b for those that qualify. • Compac 3 for MEA. • Compac 4 for up to 30 additional RECS <p>under Commodity Financing Program</p>	<p>Implementation Target (Type and Quantity) (D-2)</p> <p align="center"><u>Life-of-Project Budget</u> (\$000)</p> <table border="1"> <tbody> <tr> <td>IA</td> <td>\$ 4,968</td> <td>\$ 0</td> <td>\$ 4,968</td> </tr> <tr> <td>Training</td> <td>320</td> <td>304</td> <td>624</td> </tr> <tr> <td>Commodities</td> <td>31,800</td> <td>6,910</td> <td>38,710</td> </tr> <tr> <td>Evaluation/Audit</td> <td>150</td> <td>0</td> <td>150</td> </tr> <tr> <td>Project Op., Mgmt., Monitoring</td> <td>900</td> <td>6,314</td> <td>7,214</td> </tr> <tr> <td>Contingency/Inflation</td> <td>1,862</td> <td>0</td> <td>1,862</td> </tr> <tr> <td>TOTAL</td> <td>\$40,000</td> <td>\$13,528</td> <td>\$53,528</td> </tr> </tbody> </table>	IA	\$ 4,968	\$ 0	\$ 4,968	Training	320	304	624	Commodities	31,800	6,910	38,710	Evaluation/Audit	150	0	150	Project Op., Mgmt., Monitoring	900	6,314	7,214	Contingency/Inflation	1,862	0	1,862	TOTAL	\$40,000	\$13,528	\$53,528	<p>(D-3)</p> <ul style="list-style-type: none"> - Quarterly progress reports. - Financial reports. - A.I.D. and GOP monitoring. 	<p>Assumptions for providing inputs: (D-4)</p> <ul style="list-style-type: none"> - Availability of incremental funding (AID). - Timely availability of required GOP counterpart. - Proposed loans to RECs are financially viable. - RECs willing to accept loans at proposed interest rate. - MEA/GOP continued commitment to reform. - RECS' membership supports participation in project.
IA	\$ 4,968	\$ 0	\$ 4,968																												
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TECHNICAL ANALYSIS

1. General Approach

The Philippines' Rural Electrification Program is an ongoing program that has developed and grown tremendously in the past few decades. The Technical Analysis will discuss the rationale for the Rural Electrification Program in relationship to the proposed systems reduction loss program and financial management information systems improvements.

The Philippines has an extensive history of rural electrification through the use of RECs. The problems identified today do not concern technical capacity or feasibility, but rather arise from revenue problems, rate structure and institutional/financial management defects. The engineering design, construction, operation and techniques for maintaining the distribution systems will continue under the current system. Rather, the expertise to manage the cooperatives, collect revenues and efficiently manage operations and maintenance will be improved.

Upgrading existing systems and improving systems operation is the focus of the Rural Electrification Project. The project concentrates on improving existing RECs and service areas to reduce line losses, power interruptions, etc. Project outputs will be measured in terms of improved operating efficiency rather than physical growth.

2. Systems Loss Reduction Program

Due to the rapid expansion of REC service areas since 1980, institution building within the cooperatives and NEA was given lesser priority and not adequately addressed. As a result, the RECs have been oriented towards construction and expansion of distribution lines, rather than institutional and financial viability. Mission studies have determined that a very serious problem for the RECs is the energy lost in the distribution system due to technical and administrative or non-technical losses. Line losses of up to 50% have occurred because of lack of spare and replacement parts and line hardware. A.I.D. plans to reduce system losses through the immediate procurement and provision of essential commodities to selected RECs which have been experiencing line losses. Early provision of essential commodity inputs will enable NEA to provide material support to selected better managed coops, and at the same time entice those less well managed to begin to undertake needed institutional reforms. A reduction in line losses will have an almost immediate impact on a coop's revenue base. The goal is to bring REC system losses to 15% or below.

The magnitude of this loss particularly in those RECs under the P500M relending program is shown in Table _____. A serious waste of resources, reduced economic benefits and dissipated financial resources for RECs is outlined. The methodology to be employed in reducing losses includes the following technical concepts: a) right of way clearing; b) metering of unmetered consumers; c) load balancing; d) inspection of metering equipment of industrial consumers; e) installation of capacitors; f) massive calibration

and inspection of meters; g) use of insulated conductors for the secondary lines; h) transformer loan management; i) rehabilitation of lines; k) installation of neutral conductors and groundings. Table F1 also shows the system loss reduction target.

TABLE F1

SYSTEM LOSS REDUCTION TARGET
COOP RELENDING PROGRAM

	AVE. MO. COOP	KWH PURCH.	AVE. MONTHLY SYSTEM LOSS		TARGET		POWER FACTOR	
			KWH	%	6 MOS.	1 YR.	PRESENT	TARGET
1. BATELCO	6,576,166	2,974,333	45.00	35.00	25.00	92.40	95.00	
2. NEECO I	2,770,333	1,266,250	45.00	35.00	25.00	85.83	95.00	
3. NEECO II	1,800,166	717,750	40.00	30.00	20.00	82.15	95.00	
4. NEECO III	1,879,083	775,583	41.00	30.00	25.00	79.64	95.00	
5. PELCO I	2,142,416	881,250	41.00	30.00	25.00	87.33	95.00	
6. PELCO II	6,899,583	2,672,666	39.00	30.00	20.00	90.71	95.00	
7. PELCO III	3,643,833	1,204,500	33.00	25.00	20.00	94.34	95.00	
8. PRESCO	237,583	101,583	42.00	25.00	20.00	90.44	95.00	
9. TARELCO I	2,220,416	637,583	28.00	25.00	20.00	87.58	95.00	
10. TAR'CO II	1,641,333	384,750	23.00	18.00	15.00	87.28	95.00	
11. BATELEC I	3,420,250	788,333	23.00	18.00	15.00	88.33	95.00	
12. BAT'CO II	5,955,000	1,810,250	30.00	25.00	18.00	86.79	95.00	
13. LAGUNA	1,796,333	643,416	36.00	25.00	20.00	85.41	95.00	
14. ALECO II	4,097,166	1,500,833	37.00	30.00	25.00	84.53	95.00	
15. ALECO III	1,405,333	583,333	42.00	25.00	20.00	87.05	95.00	
16. CAS'CO II	4,663,500	1,299,833	28.00	20.00	15.00	91.57	95.00	
17. CS'CO III	1,272,916	310,833	26.00	20.00	15.00	92.25	95.00	
18. CAS'CO IV	576,000	158,333	36.00	25.00	20.00	95.57	97.00	

The methodology to be employed in reducing line losses will result in significant savings immediately upon upgrading of the distribution system component.

The distribution system of the RECs follows standards set by NEA. The 20 RECs and six alternates selected for COMPAC 1 demonstrate management capability but remain in need for technical componentry to reduce power losses. The immediate procurement of essential commodities to attack the line loss problems of selected RECs is planned. Rehabilitation parts which will be supplied in the procurement program are outlined as follows:

The procurement of poles, meters, transformers and service drop wires are the most critical items to initiate a line loss reduction. Overhead lines, using wooden poles, which are either creosoted or tanalized, will be utilized. The usual primary distribution pole is 10.7 meters. Cross arms are 2.4 meters creosoted or tanalized. All poles have ground wires coiled at the butt and connected to the overhead neutral wire, which is continuous throughout the distribution system. The conductors are bare and the neutral wire is common for the 13,200 volt primary and the 240 volt secondary underbuild.

Transformers on virtually all systems are overloaded and are frequently the wrong size for the load they should be carrying. The development of more durable multi-grounded systems is planned. The distribution voltage which is standard for all RECs, is 13,200 volts line-to-line, and 7,620 volts line-to-neutral. The neutral wire is grounded at every pole at the neutral point of the substation transformer. This makes the system a multi-grounded system.

Procurement plans include four mobile transformers which will be centrally located for use by NEA as standby units in case of failure or the need to repair cooperative substitution equipment. Distribution transformers are standardized at 7,620 volts for line-to-neutral connection. Secondary voltage is 240 volts grounded. A typical residential area is served by a 10 KVA distribution transformer with a single high voltage bushing and two 240 volts low voltage bushings. The high voltage bushing has the primary fuse inside. The transformer is connected directly to the overhead 13,200-7,620 volt line without the necessity of using a fused cut-out. A distributor-type lightning arrester is installed on the transformer tank. The disconnecting device is provided by the use of hot line clamps to simplify the transformer installation. The transformers are mostly of Completely Self Protected (CSP) type, which has a high side fuse and a low side circuit breaker.

The house utility voltage is 240 volts with one line grounded. Secondary lines consist of a bare grounded line (common with the primary neutral for underbuilt secondary line) and a 240 volts insulated line. Drop wire to the houses consist of a bare ACSR messenger wire twisted with an insulated ACSR wire connecting to the house meter. This is a duplex drop wire. House meters are single element 240 volts cyclometer type. For commercial and industrial consumers, three phase service is available and two-element, 3-phase, 3-wire meters are used. A triplex drop wire consisting of 2 twisted insulated ACSR wires and a bare ACSR wire goes from the pole to the 2 element, 3 phase, 3-wire meter.

3. Financial Management Information System

The initial FY 1988 financing will include a comprehensive institutional development package aimed at managerial improvements within the NEA, including the installation of an improved financial management information system and a concomitant transfer of knowledge to the RECs. The objective of the financial management information system will be to take NEA beyond the data processing stage. This system will be designed to support management planning

and decision-making, and will be able to access all of the information on NEA's data base to permit ad-hoc reporting.

A first-rate general ledger system for NEA will:

- Provide reliable information which will allow NEA to determine the composition of any number that appears in any report, and relate to its input components.
- Simplify accounting structures; NEA shall not be forced to define structural information in a redundant manner
- Easily accommodate NEA coding system.
- Provide reports ranging from detail level to concise summaries.
- Provide periodic reports in formats useful to the different NEA organizational levels.
- Generate comparison reports, showing net activity in selected accounts for particular codes or identifiers.
- Provide a report generator for such items as income and expense trend analysis, and schedules of asset depreciation.

Although the project will be concerned with the implementation of billings and accounts receivable systems at selected RECs, careful consideration shall also be given to the capability of these systems to generate information which can be consolidated at the NEA level. This would result in improved controls and monitoring of key performance indicators, such as collections, by NEA management.

The selected billing and accounts receivable system must be easy to operate and responsive to the requirements of the REC. Among the important factors to take in consideration for the design or selection of an appropriate billing system for the RECs are the following:

- Number of clients supported (typically, RECs memberships range between 6,000 and 65,000 clients).
- Number of rate classes supported (i.e., residential, industrial, commercial, etc.).
- Flexibility of the rates structure supported, including capabilities for any combination of flat charges, fuel surcharges, seasonal and time of day differentiated rates, declining blocks rates, etc.
- Support of regular or cycle bills.
- Interface to Accounts Receivable System.

The benefits of improving the financial management information system include better controls and cash flow through a standard billing and accounts receivable system, improved and meaningful reports for management, reduced manpower, and reduced costs compared to non-computerized methods.

ADMINISTRATIVE ANALYSIS

I. National Electrification Administration:

A. Description

The National Electrification Administration (NEA) will have overall responsibility for implementing the project. The NEA is a governmental agency created in 1969 through Republic Act No. 6038 with the primary objective of implementing the National Rural Electrification Program through a system of Rural Electric Cooperatives (RECs).

In August 6, 1973 Presidential Decree No. 269 converted NEA to a corporation with a broad charter declaring total electrification as a GOP objective.

In pursuance of this objective, the NEA provides institutional, technical, financial, regulatory, supervisory and developmental services. A brief description of its services follows:

a. Institutional

i) Formation of RECs for the purpose of developing community involvement in the supply, promotion and encouragement of full use of electric service.

ii) Managerial, administrative, legal, and training services for RECs.

b. Technical

i) Supervision of construction of transmission and distribution lines, headquarters, power plants, substations, and other facilities.

ii) Procurement of rural electrification materials and equipment from both local and international sources.

c. Financial

i) Financier of NEA and RECs programs.

ii) Managerial assistance on financial operations of RECs.

d. Regulatory

i) Granting of franchises to electric systems.

ii) Regulation of rates of RECs.

e. Supervisory

Supervision of institutional, technical and financial development and operations of rural electrification, dendro-thermal, mini-hydro and other special programs of RECs.

f. Developmental

- i) Development of alternative energy projects for RECs.
- ii) Promotion of special project such as school lighting and waterworks, irrigation, small and medium-scale industries and rural housing.

B. Organization of National Electrification Administration

Until recently, the organization of NEA was based on a 1981 organizational chart. In line with the GOP's reorganization/streamlining program, NEA submitted a reorganizational structure to DBM in July 1988, which should be implemented by September 8, 1988.

The former organizational structure of NEA did not allow the agency to fulfil its primary objective to provide reliable electricity to rural areas. NEA's structure had grown to include offices and divisions that have entirely different objectives from providing reliable electric power to rural areas. For example, the special project offices, Tanglaw and Promotion of Industries, function as extensions of the defunct Ministry of Human Settlements and provide livelihood projects to the communities. Both project offices are focusing on integrated rural development programs such as the REC livelihood projects which include reforestrations, charcoal kilns, fish ponds, garments, etc.

C. Training

NEA has managed a training program through a special project office, the Rural Electric Training Office (RETO), since 1976. The office's objectives are to plan and implement training programs that assist other developing countries to set up and develop their own rural electrification programs by using the Philippine experience as a model.

The dendro-thermal and mini-hydro offices are established as separate organizations within the NEA structure. The offices' objectives are to install dendro-thermal power plants and mini-hydro plants. Both offices have placed heavy demands on NEA's budget, manpower resources and technical training staff. A review of NEA's organizational chart shows that it is organized horizontally with a total of 13 line and staff departments all reporting to one administrator. Thus, decision-making is highly centralized. Despite the presence of departmental objectives and the presence of functional administrators, department heads rely on the administrator to decide which problems fall within their scope of responsibilities. The wide span of control of the Administrator and the centralized decision authority impedes NEA's ability to respond readily to the needs and problems of the RECs.

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Although NEA created the Rural Electric Training Office (RETO) to provide training assistance to foreign countries, it does not have a single body responsible for planning and implementing training programs for local staff development. The staff's training depends on the initiative of the department. On the whole however, the Engineering and Mini-hydro offices have had some international and domestic technical training. Department heads and directors have also been provided with adequate training. However, training in the Finance and Program Control Department is lacking, particularly in monitoring the RECs financial performance. Some of the Finance staff lack sufficient background on how to implement NEA's policy guidelines, systems and procedures.

In October 1986, the NEA created a training committee which is responsible for reviewing the department heads' recommendations for training. The Committee is headed by the Director for Coop Development. However, the committee was only established to strictly review recommendations rather than to plan and program NEA's staff training requirements. The committee does not conduct surveys to determine the training needs of the staff.

NEA's manpower requirement depends on the number of projects it is implementing. In the mid-seventies, the Budget Commission had approved 1400 plantilla employees for NEA. Its manpower has steadily increased from 575 in 1974 to 1044 in 1982.

D. Staffing Issues

In 1982, the government reduced its equity contribution to NEA due to the worsening economic crisis. In the same year, NEA froze their recruitment of employees. Manpower has steadily decreased since then. At present, NEA's manpower complement as shown in Annex P is 742. The Special Project Offices (i.e., dendro-thermal, mini-hydro, etc.) have 162 personnel or 22% of total NEA plantilla.

On the other hand, the Finance Department which includes the Systems Audit Group, appears to be understaffed. Although the Finance Department staff is assigned to administer the management and financial audit of the RECs, members of this group are frequently tapped to assist the General Managers of ailing RECs.

NEA's previous organizational chart reflects the trend to impose responsibilities unrelated to rural electrification. This situation has encouraged the drift of NEA away from its basic business.

NEA submitted a new organizational structure to the Department of Budget and Management in July 1988, which is now being implemented. Under the new structure, (please see Annex Q) NEA will have an assigned group to monitor the activities of RECs. The new plantilla demonstrates a shift in NEA policy towards providing more supervision and control over RECs. For example, the Cooperative Development is now divided into two departments: (1) Coop

Operations and (2) Evaluations. The Coop Operations and Evaluations will monitor and evaluate REC operations to determine if RECs are following NEA rules and guidelines. A REC services department was created to make NEA more responsive to RECs needs by offering institutional development assistance. The administrator has also designated 12 regional electrification managers (REMs) to oversee REC operations on a regional basis. The REM duties include the following:

1. Oversee overall performance of the REC management;
2. Represent NEA in REC board meetings as needed;
3. Submit monthly accomplishment report of concerned RECs to the Administrator; and
4. Recommend suspension, dismissal and other disciplinary action on RECs General Manager or Board of Warranted, after due process.

The present 92 personnel assigned to the Coop Development Department will be expanded to about 150 positions for the two departments (79 in Coop Operations and Evaluation Department and 71 in Coop Services Department).

The reorganization of NEA has increased the responsibilities of the Finance Division. Before the reorganization plan, the Finance Department was divided into two departments: (1) Finance and (2) Loans. The department was split so that the Loans Department could concentrate on the administration of loans granted to RECs while the Finance Department could handle the in-house finance operations. One of the first activities launched by Loans Department was the intensification of NEA's collection of amortization payments from the RECs. The P500 million relending fund will also be handled by the Loans Department. The present 108 staff in the Finance Department will be modified into 64 staff positions in the Finance Department and 73 staff positions in the Loans Department.

The current administrator has also placed great emphasis on in-house training and has created an In-house Training Division. The NEA In-House Training Office has the following objectives: a) to strengthen the NEA organization and b) to continuously upgrade the NEA personnel through foreign and local training sponsorship to ensure sufficient provision by NEA of technical managerial and administrative assistance to RECs.

The NEA has also started to negotiate with local accounting firms for a comprehensive audit of all RECs.

II. Rural Electric Cooperatives

A. Description

NEA's national policy is to implement the total electrification of the countryside on an area coverage basis through RECs. The RECs have already developed capabilities to design, construct, operate and maintain their systems.

There are now 117 REC's providing service in franchise areas. All REC recipients of rural electrification loans are supervised and controlled by NEA.

Although the RECs are expected to manage their own operations, they are subject to the policies, rules and regulations of NEA which provides them with technical, financial and institutional assistance.

All RECs must register as corporations with NEA. The corporation is non-stock holding and non-profit, primarily formed for the purpose of supplying, promoting and encouraging the fullest use of electrical service to its members on an area coverage basis, pursuant to the provisions of Presidential Decree No. 269, as amended.

The by-laws of the RECs set forth the rights and obligations of the members, the obligations of the cooperative as a legal entity and the duties and responsibilities of its officers. Thus, the structure of the REC is comprised of members, the Board of Directors, the management and their staff. The typical organizational pattern of RECs is illustrated in Annex _____.

B. Organization of Rural Electric Cooperatives

a. Board of Directors

A. The Board of Directors is responsible for managing the business affairs of the RECs. The Board formulates and adopts policies and plans, promulgate rules and regulations for the management, operation and business conduct of the RECs. The Board executes the power of the RECs, except authority that is by law, in Articles of Incorporation and By-Laws, conferred upon or reserved to the members of the REC, or reserved to the NEA.

The Board has also the authority to hire, promote and terminate employees through its personnel committee.

However, in the past, the Board has sometimes carried its powers to an extreme. In some cases, the Board, in effect, runs the REC's daily operations, rendering the General Manager powerless, instead of supervising the operation of a REC.

The quality of the Board of Directors is clearly a critical element affecting a REC's operations and performance.

b. General Manager

The management of the cooperatives is vested in a general manager (GM) appointed by the Board. The GM makes regular and special reports to the Board and NEA. The appointment and dismissal of the GM requires approval by NEA. The GM is probably the single most influential factor affecting a REC's performance. For example, the GM of one REC was able to return its profitability from a P10M loss in only three years. In another REC, the GM was able to decrease net losses by 56% in just one year by enforcing strict

policies. Therefore, it is important that the NEA consider the following factors when monitoring a REC's performance: a) the management policies that the GM follows in key areas such as systems loss, collections, disconnections, staff productivity, budgeting, etc.; b) the GM's strict enforcement of REC's policies; c) the GM's management of record keeping, reporting, etc.; d) the GM relationship between the staff and Board of Directors, and the overall communication and balance of power between the Board of Directors, GM and staff.

c. Management, Staff and Employees

The management and their staff and employees provide assistance to the GM to plan and implement programs and projects of the REC. Generally, the GM has the following organizational staff:

1. Office Services Department which provides accounting, bookkeeping, cashiering, billing and collection services.

2. Member Services Department which provides member education, information, housewiring and power use services to the members.

3. Engineering Departments which are responsible for system design, right-of-way, line staking and warehousing.

4. Construction and Maintenance Department which responsible for line construction, operation and maintenance.

5. Internal Auditor who handles audit disbursement vouchers.

6. Power Generation Department (for self-generating cooperatives) which operates and maintains generating units.

The organizational structure, plantilla positions and staffing pattern are adopted by the Board of Directors and reviewed and approved by NEA.

C. Training

A training program has been implemented to help develop the capabilities of the personnel and officers of the RECs by giving them opportunities to perform their work more efficiently and acquire skills.

1. Management Courses are short-term courses teaching management principles and practices, cooperativism, organization of NEA, REC Board, management and the members of the REC. Courses on human relations, utility accounting, engineering and legal aspects affecting management decisions are also offered to the general managers and members of the Board.

2. Management and Office Operation Courses are offered to REC staff and personnel. These include courses on REC accounting, warehouse operations,

meter reading, billing and collection, work order procedures, supervisory management for department heads of the RECs, materials management and start up of training and information systems.

3. Technical/Electrical Training Courses are offered to linemen, barangay electricians, plant operators, engineering, construction and maintenance crews. The courses offered include: linemen training, electrician training, secondary/distribution line staking, distribution and transmission line design and construction supervision, power plant operations, maintenance and rehabilitation, kilowatt-hour meter calibration, testing operation and maintenance, and administration of construction by force account.

4. Safety Seminars are also given to the REC personnel, such as: safe line operation and maintenance, first aid trainers course, accident prevention for REC personnel and driving improvement courses.

5. Extension Services on Cooperative Local Training Programs are offered, and include: personnel development course, seminar on records and file management, handling of consumers' complaint and personnel management.

A review of the NEA's and REC's training programs shows that the majority of RECs are not provided with sufficient training. Most of the RECs rely on NEA for training on an ad hoc basis which varies from year to year. Training needs analyses are generally not performed by the RECs.

Other institutional assistance extended to the RECs from NEA includes guidance in conducting district elections, member education and information drives, personnel administration and organization development.

The RECs hold district meetings to elect the district representative to the Board of the cooperative. From time to time, RECs conduct personnel reorganization and organizational analysis to affect development in the organization and increase efficiency. To develop membership awareness and participation in the affairs of the electric cooperative, the RECs implement membership education and information programs, through both broadcast and print media.

ANNEX H

Financial Analysis on the Viability of the Commodity Loan Packages

This analysis aims to determine if the additional investment (loan) to be undertaken by the RECs to reduce systems losses could pay for itself during the estimated eight year serviceable life of the capital asset. Expected savings derived from system loss reduction will cover the amount of the loan, assuming a minimum line loss reduction of only 10 to 35 percent. It does not examine the overall financial situation of individual RECs. However, each participating REC will be required to prepare a financial projection which will clearly show its financial viability. This forecast will be prepared in a uniform format, system-wide and must include:

- a) Cash flow from operations.
- b) Adequacy of the cash flows to:
 - cover operating and non-operating operations;
 - service the NPC power account and/or recover costs of self generation;
 - service NEA principal and interest amortization payments;
 - meet current and projected payroll costs; and
 - provide funds for future capital needs.
- c) All significant assumptions underlying the projections.

These financial projections will be submitted to NEA for review and analysis.

This study used the Discounted Cash Flow or the Net Present Value (NPV) method of analysis was used and a representative sample of three RECs have been selected, each REC representing a group having a common or similar management capability and performance, namely:

- a) Bohol I Electric Cooperative, Inc. (BOHECO) - to represent the twenty better managed and financially viable cooperatives identified by the Price Waterhouse study that are eligible to avail of the complete loan package (COMPAC 1, valued at \$307,500 [FOB]);
- b) Pampanga III Electric Cooperative, Inc. (PELCO III) - to represent the nineteen RECs deemed as most needy of immediate assistance and which are eligible to avail of the equipment loan package (COMPAC 2, valued at \$90,000 [FOB]); and
- c) Samar I Electric Cooperative, Inc (SAMELCO) - to represent those RECs considered as neither falling under Category (a) or (b) but, nevertheless, are likely to be eligible to avail of the equipment loan package under the later stage of the Project.

Assumptions:

1. The two commodity packages are anticipated to bring about a reduction in systems losses from 50% and above to an average of 15% (and below) of the total kwh purchased/generated.
2. Five cases of assumed systems loss reductions, 10%, 20%, 30%, 35%, and 40% are presented.
3. Loan Interest rate: 12% per annum based on unpaid diminishing balance
Amortization Period: 8 years
4. Annual cash savings are expected to be realized for 8 years-- consistent with the useful life of the capital assets to be acquired from both packages. For purposes of comparison, a sensitivity analysis using 3 inflation rates (6%, 9%, and 12%), and 2 discount factors (9% and 12%), is presented.
5. No taxes were considered in the computation of the annual cash flows. The imposition of taxes to the NEA and the RECs as provided for by Executive Order No. 93 (effective 03/01/87) is still being contested by NEA and a resolution against it has accordingly been filed to the Philippine Congress.

The following tables reflect the results of the above study:

The following tables reflect the results of the above study:

	COMMODITY PACKAGE 1			
	BOHECO			
	Assumed Systems Loss Reduction			
	<u>15%</u>	<u>20%</u>	<u>25%</u>	<u>30%</u>
NPV (\$000)	(\$ 183.2)	(\$ 107.5)	(\$ 31.9)	\$ 44
PP (in yrs)	12.32	9.23	7.39	6.16
IRR (%)	2.6	6.8	10.5	13.9

All three investment criteria require a minimum reduction in systems losses of 30% to make the loan viable, that is, a positive NPV; the least payback period; and an IRR exceeding the 12% discount factor.

With a 30% systems loss reduction, BOHECO's systems losses currently pegged at 18% of total kwh purchased/generated (2,088,000 kwh) would be reduced to 12.9% (1,461,600 kwh)--achieving the 15% or below systems loss targeted by the Project.

COMMODITY PACKAGE 2
SAMELCO

	Assumed Systems Loss Reduction			
	15%	20%	25%	30%
NPV (\$000)	(\$ 24.9)	(\$ 6.8)	(\$ 38.5)	\$ 70.3
PP (in yrs)	8.59	6.94	5.15	4.3
IRR (%)	7.9	13.1	17.8	22.1

To make the loan viable, all three investment criteria require a minimum reduction of 20% where a positive NPV; a payback period of less than 15 years; and an IRR of more than the 12% discount factor, could be realized.

With a 20% systems loss reduction, the present systems losses at 12% of total kwh purchased/generated (469,000 kwh) would be reduced to 10% (375,200)---also achieving the 15% or below systems loss targeted by the Project.

COMMODITY PACKAGE 2
(PELCO)

	Assumed Systems Loss Reduction			
	15%	20%	25%	30%
NPV (\$000)	(\$ 1,758.4	\$ 2,384.5	\$ 3,010.6	\$ 3,636.7
PP (in yrs)	0.44	0.33	0.26	0.22
IRR (%)	- more or less 100% -			

PELCO's current systems loss represents 33% of total kwh purchased/generated (14,723,000 kwh). Even with only a minimum reduction of 15%, the loan will prove to be viable since all investment criteria could be satisfied. With this rate, the 33% systems loss of PELCO could be reduced to 28%, although the 15% or below systems loss targeted by the Project would not be achieved. In any case, what matters is that the loan could sufficiently be financed by the expected savings derived from this reduction.

A SOCIAL SOUNDNESS ANALYSIS OF THE
PHILIPPINE RURAL ELECTRIFICATION PROJECT

by

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June 7, 1988

EXECUTIVE SUMMARY

The USAID is currently developing a \$50.455 million Rural Electrification Project which seeks to upgrade and strengthen the institutional and physical infrastructure of the cooperatives. The project is expected to (a) reduce the number of cooperatives; (b) reduce systems loss and power outages; (c) increase collection efficiency; (d) decrease operating expenses and (e) improve the technical system. It is hoped that their achievement will lead to an increase in opportunities for rural development, industry and employment.

The project, spanning seven years, will involve three components. Component I seeks to assist selected RECs overcome their problems in systems loss commodities. Component II aims to help severely distressed cooperatives meet their technical, financial and institutional difficulties. The last component seeks to rehabilitate all RECs in the countryside.

The immediate beneficiaries will be the RECs insofar as improved management systems will enable them to function efficiently and effectively as local development institutions. Individuals directly involved in the rehabilitation efforts--NEA supervisors, REC management and operations personnel--will also be able to further develop their managerial and technical skills through the project's training programs.

In the long-run, however, the ultimate beneficiaries will be the households in the rural communities who will enjoy a more affordable and reliable service from the rehabilitated RECs. The quality of life of these households will be enhanced with the convenience which electricity provides. The livelihood and economic activities of some households may also improve through the indirect, spill-over effects of agro-industrial development which electrification may spur. Based on this assumption, business enterprises, small markets, and production centers are also potential beneficiaries.

Analysis indicates that by and large the project will be acceptable to most of the people affected by it. Since Component I involves the mere infusion of needed physical infrastructure, no major obstacles are foreseen in its implementation. The selection of "model cooperatives" in this phase is expected to generate positive reactions and even cooperation on the part of the

management and staff. However, the implementing agency should consider other factors which may impinge on the project such as the location of the RECs and the peace and order situation in these places.

The response to the second phase is likely to be varied. A favorable attitude among consumers may be expected in areas where electric service is less than satisfactory or where RECs are inefficiently managed. However, NFA's move to oust the management of some RECs and retrench the staff will probably draw mixed reactions. These people may either be resentful or receptive to the project. Either way, the project would do well to carefully assess and implement its plans. The impression that the selection of the pilot region is an indictment of the cooperative's performance must be avoided. Instead, the chosen region's potential for modeling institutional capabilities for change must be emphasized.

If things proceed as planned, the nationwide rehabilitation program for the third component will be easily welcomed. The people are likely to realize the need for maintaining financially viable RECs in order to provide affordable and reliable service.

The program contains important features which in time will allow the spread of benefits across various groups and regions. The viability of these features will also be contingent on three sets of factors: 1) the REC's internal organization and functioning; 2) the REC's relations with local interest groups and the community as a whole; and 3) the support and commitment which the government accords the program.

For cooperatives to be financially viable, conscientious and honest personnel are essential. In addition, however, mechanisms for ensuring control and accountability particularly in terms of finances are equally necessary. These measures include fool-proof procedures for reading meters, recording bills, maintaining files on the one hand, and vigilance from the membership on the other. In a way, "institutionalized suspicion" must be operative.

Sustainability can be achieved by at once depoliticizing the program and achieving adequate support and cooperation from local officials and leaders. A delicate balancing between the local government and the RECs must be maintained in matters relating to policy decisions, systems operations, maintenance, and

enhancement.

Furthermore, sustainability would be assured if the government is committed to the project and realistic about its goals, and if it exercises the political will to implement electrification. For a start, the government needs to clarify the role of rural electric cooperatives in the context of the overall rural energy development plan. This way, goals regarding system maintenance and expansion may be realistically set, and projections of additional equipment, expenses, and profit margins accurately drawn up.

The rehabilitation program will incur some social costs in the process. Notable in this regard is the displacement of the management and staff of some RECs and the loss of political support from some sectors of the local elite. Conflict can be averted, however, if the sources of strain and misunderstanding are identified and resolved. Some of these questions include the perceived break on expansion, alleged discrepancies in records, and yet unsubstantiated innuendoes about graft and corruption.

The expected long-term benefits of the rehabilitation program in terms of stimulating rural agro-industrial development and even improving the lives of the poor majority appear less certain. An electrification program, rehabilitated as it might be, may have some impact only if it is implemented with adequate human and financial resources, linked to complementary projects in the area, and carried out in an area developed enough to support it.

On the whole, however, the Rural Electrification Project appears socially sound and viable. Rehabilitation efforts will generate enough support to outweigh the expected resistance from some sectors. The project has adequate provisions for ensuring the spread and sustainability of benefits. Its objective of establishing financially viable RECs as a condition for providing more affordable and reliable service is thus socially feasible.

A SOCIAL SOUNDNESS ANALYSIS OF THE RURAL ELECTRIFICATION PROJECT

BACKGROUND

One of the projects which continues to be a priority of the Government of the Philippines is the total electrification of the country. For the past twenty three years, the Philippine Government has displayed an active interest in rural electrification. It has in some ways looked upon electrification as a panacea of sorts in its efforts to promote the overall development and improvement of the quality of life in the rural areas. The unique and ambitious rural electrification program of the country is premised on the belief that electrification will be the cutting edge for rural development. It is envisioned to be instrumental in making the rural areas more productive and secure by attracting industry and creating opportunities for employment.

Attempts at rural electrification began way back in the mid 1960's. An A.I.D.-financed power survey in 1966 had recommended that the Phil. initiate a rural electrification program modeled on the U.S. experience. At that time, the U.S. based model of electric service through rural cooperatives proved economically viable. Since the rural Philippines bore little resemblance to the rural United States, two pilot cooperatives, one in Misamis on the island of Mindanao and the other in the Victorias - Manapla - Cadiz area in the province of Negros Occidental, were set up to test the applicability of the model. With the modest achievements demonstrated by the pilot projects, the Phil. government through the National Electrification Administration (NEA) embarked on the electrification of the remote and distant areas of the country. Since 1969, the NEA has extended loans to regional electrical cooperatives (RECs) for the construction of electric generating plants, transmission facilities and distribution systems. It has also provided technical and professional assistance to these public utilities. At its inception, the electrification program's immediate objective was to establish in each province an electric cooperative system within the first four years of its operation. Its ultimate goal was to electrify the country totally by 1990. The NEA has been assisted in this task by generous budget allocations from the National Treasury and by substantial foreign loan assistance, primarily through the U.S. Agency for International Development (USAID).

Eighteen years after its organization, the NEA has successfully accomplished the first objective. In fact, the number of RECs it has set up over the past few years has far exceeded the original projection. Considering the number of provinces in the country vis-a-vis the total number of RECs, the ratio now stands at 1:2 (66:118). Two years before the target completion date of its second objective, it has energized 1,278 (93%) towns and cities, 19,939 (58%) barangays and 2,813,330 (58%) households. The figures presented speak highly of the rapid expansion of the rural electric system. However, the drive towards rapid expansion and total area coverage, while successful in some ways, has severely strained the NEA. The lack of adequate support for institution building coupled with mismanagement, politicization, and rising energy costs, led to a host of financial, managerial and technical problems.

At present, the major problems faced by the rural electrification system are as follows (USAID 1988):

1. Insolvency of RECs

The lack of financial stability of the RECs are attributed to a number of factors - (a) creation of small RECs which are economically unviable, (b) inconsistent reporting of asset and liability accounts, (c) poorly based buying and selling power rates which cause the lack of positive operating margins.

2. Mismanagement of NEA and RECs

The NEA staff are poorly trained, insufficiently employed and lack expertise on rate-making and financial management. The RECs on the other hand are run by poorly trained employees and in most cases, ineffective managers. Poor organization combined with the absence of decisive management has resulted in unacceptably high systems losses, low collection rates and consequently inadequate revenue levels

3. Deterioration of Technical Systems

In view of the lack of funds, portions of the RECs distribution system have fallen

into disrepair, causing excessive power losses. Shortage in funds has also resulted in the unavailability of repair facilities, lack of supply of tools and maintenance equipment and nonreplacement of deteriorating equipment.

PROJECT DESCRIPTION

To alleviate these problems, the USAID Philippines is now developing a Rural Electrification Project which seeks to upgrade and strengthen the system's institutional and physical infrastructure. The plan essentially calls for the NEA and the RECs to be rationalized and streamlined so that they may more effectively and efficiently manage the funds available for rehabilitating the national electrification network. The project is expected to result in:

- a) A substantial reduction in the number of cooperatives, to establish units of a more economic size;
- b) A reduction in systems losses from about 50 percent to an average below 15 percent;
- c) An average in REC collection efficiency to an average of 95 percent of total accounts receivable (not of monthly billings, as it is now computed);
- d) A decrease in operating expenses per kilowatt hour and accordingly in rates; and
- e) Significant technical improvements and sharply reduced power outages.

The achievement of the above is expected to increase or improve:

- a) opportunities for the development of rural enterprises;
- b) rural employment;
- c) agricultural products;

- d) rural income; and
- e) the physical quality of life.

The project will involve three components. brief description of each of them is given.

Component I

This will consist of a brief, immediate impact program to attack the line loss problems of the better-managed RECs. A selected few of the more well-managed, financially viable RECs will be identified and provided the system loss commodities without further institutional analysis. In addition to commodities, a management information system to collect and analyze energy loss data will be provided. A detailed report containing recommendation for the nationwide system loss reduction activities will also be given. Project cycle is expected to be completed in 3 to 4 months.

Component II

This component will consist of a pilot rehabilitation effort in a region in Luzon, an evaluation of its results and the planning for an expanded effort in other region. Technical assistance, training and commodities will be provided in support of:

- a) the radical restructuring of NEA
- b) reconciliation of NEA-REC loan accounts
- c) consolidation of RECs into larger units
- d) REC restructuring
- e) rate restructuring

Component III

The rehabilitation of RECs throughout the countryside will be the aim of the last component. The reforms introduced in Components I and II will be continued nationwide.

ESTIMATED PROJECT COST

The estimated total project cost is placed at \$50.455 million, \$40 million from AID and \$10.455 from the GOP. The project will span for 7 years with funding being provided at the beginning of FY 1988. Target completion date is December 1995.

SOCIAL SOUNDNESS ANALYSIS OF THE PROJECT

Despite its seemingly purely technical nature, the proposed Rural Electrification Project remains in many ways a social development program. The "social soundness analysis" that follows, therefore, identifies what the social dimensions of the project are and examines the extent to which they may affect the implementation process. It also considers how the sociocultural context may bear upon the program's plans. The report focuses on three distinct but interrelated aspects:

1. the compatibility of the project with the sociocultural environment in which it is to be introduced - sociocultural feasibility
2. the likelihood that the new practices or institutions introduced among the initial project target population will be diffused among other groups - spread effect
3. the social impact or distribution of benefits and burdens among different groups, both within the initial project population and beyond - social consequence and benefit incidence

BENEFICIARIES

The proposed program is expected to provide various benefits to different sectors. In the short-term, the RECs as local development institutions will clearly function more efficiently and effectively once improved management systems are introduced. Similarly, individuals directly involved in the rehabilitation efforts--NEA supervisors, REC management and operations personnel--will be able to further develop their managerial and technical skills through the various training programs the project

plans to undertake. These training sessions will cover various subjects, from substation operation and maintenance, meter testing and repair, to inventory control, financial planning, cash management, accounting, and auditing.

In the long-run the ultimate beneficiaries are expected to be the households in the rural communities reached by the electrification program. Using the NEA figures for 1986, it is expected that close to 5,782,000 households in 1,372 municipalities and 34,453 barangays will realize the effects of this project by 1995. The quality of life of these households is likely to be enhanced through the direct impact on the family's home and neighborhood environment. The simple convenience of having lights after dark is reason enough for people to value electrification, if the costs are within their reach of course. The livelihood and economic activities of some rural households may also improve through the indirect, spill-over effects of agro-industrial development which electrification may spur. Based on this assumption, business enterprises, small markets, and production centers are also eyed as potential beneficiaries.

SOCIOCULTURAL FEASIBILITY

The project as described will be implemented in three phases. As such, it will affect different entities at a given time. Component I will reportedly involve the rehabilitation of ten to twenty well-managed or "Class A" RECs. At the moment, however, it is still not known as to which of the existing 118 RECs will be selected. Class A RECs include those cooperatives which are prompt in paying their debts with NPC and NEA. Their systems loss is placed at approximately 20 percent on the average. Since their problems are more technical than managerial, project assistance will come mainly by way of providing transformers, capacitors, posts, and other physical commodities.

The implementation of this Component is not likely to meet any major social obstacles. Inasmuch as this phase will involve the mere infusion of needed physical infrastructure for improved rural electrification, opposition is not foreseen on the part of the board members and staff as well as the households serviced by

these cooperatives. Instead, being chosen as "model cooperatives" so to speak may generate positive reactions and even cooperation among the personnel. This prognosis stems from the following assumptions:

1. The provision of the necessary commodities will result in more efficient service which in turn will motivate consumers to pay their monthly dues on time.
2. The costs of the physical improvements will not be passed on to the consumers. Participating cooperatives will be sufficiently funded by the AID and GOP to finance the procurement and installation of commodities. As such, consumers will not be unduly burdened by the additional costs of rural electrification.
3. The existing organizational structures within the participating cooperatives will be basically left intact. Thus, the dislocation of people to accommodate project-induced innovations will be unnecessary. The selection of "model cooperatives" for this component will inspire confidence in the management and staff, and possibly motivate them even more to discharge their duties with greater zeal and efficiency.

Component II will consist of a pilot rehabilitation program in a region in Luzon. The RECs in the area will be provided various managerial, financial, and technical assistance. These efforts are expected to ultimately result in the radical restructuring of the NEA and the RECs, including the consolidation of the latter into larger units. The response to this phase is likely to be varied. A sympathetic attitude toward rehabilitation may be expected among consumers in areas where electric service is less than satisfactory or where RECs are inefficiently managed. In the provinces of Batangas, Laguna, and Pampanga, where a total of 46 household heads were interviewed, at least 50 percent in each area expressed dissatisfaction over poor electric service (frequent and unannounced brownouts, delayed action on service requests) and unreasonably high electric bills. Similarly, in Nueva Ecija, nine towns have reportedly been without power since January 1988 because of the inability of NEECO II to pay its debts. Business has gone down by as much as 50 percent, theft and cattle

rustling have increased, and farmers have been unable to use their electric pumps to irrigate their fields. The people have reportedly appealed to the President to intercede in their behalf so that electricity is restored (De Hay, 1988). In situations such as these, rehabilitation can muster enough support from local communities if it is presented and consequently perceived as a corrective measure.

Other sectors, particularly the officers and staff of the cooperatives, are likely to respond differently. Some resentment, if not resistance, may arise due to apprehensions regarding reorganization and possible dismissals, not to mention the inefficiencies and anomalies that may be brought into the open. In the past, cases were reported in which no less than a court order and pressure from the President were needed to bring about the election of new board members. The possibility that this situation may be repeated is imminent if one would go by the current opposition to the government's plan to reorganize several department bureaucracies.

The initial response to NEA's current relending program indicates some of these possibilities. The program is facing stiff opposition in spite of its aim to bail out financially distressed cooperatives from their debts with the NPC. Resistance to the program is allegedly caused by the NEA's insistence to remove the GMs of participating RECs and replace them with its appointees before awarding the loans. According to a NEA officer, while this move is mandated by Presidential Decree No. 1645, it is still interpreted by local RECs as "one of the grand designs of the NPC and their office to eventually take over the operations of the cooperatives." This sentiment was confirmed in an interview with a GM whose cooperative has been invited to participate in the program. Apparently, this perception has prompted the GM and the Board to assume a hard-line stance on a possible takeover. With the interests of the cooperative and their very reputation at stake, they have vowed to "put up a strong fight to retain the seat of the GM." Their staff, they maintain, would follow suit if their own jobs are endangered. The respondents also registered their strong objections to innuendos and rash judgments that graft and corruption must necessarily have been committed where financial losses are reported.

While there is reason to expect an unfavorable response from the management of some RECs, the Pampanga Electric Cooperative experience in Guagua provides a

glimmer of hope for a more optimistic outcome. Key informants from this REC maintained that the cooperative's Board and GM even took the initiative of volunteering to participate in NEA's relending program. With an NPC debt of P69 million and a threat of power disconnection, they felt it their duty to consider the interests of the people above themselves. They have thus agreed to the assignment of a NEA-appointed GM to oversee major operations, with the former GM acting as an assistant. The cooperative's leadership has also acceded to NEA's demand to have the Board act in an advisory capacity. Although they find these current arrangements rather unsettling, the management has nonetheless reportedly acquiesced to NEA's proposals if only to ensure that the cooperative is able to recover. With management providing a good example of commitment to public service, the employees have taken it upon themselves to come up with a manifesto of support for the NEA appointee.

What has been depicted thus far is the immediate outcome of ousting upper management. Project designers, however, should also consider other groups that may be adversely affected. The streamlining operations may call for the removal of some employees whose performance is suspect or less than satisfactory to say the least. In addition, the moves toward consolidation are likely to result in the retrenchment of personnel. Unemployment will therefore be a social problem though hopefully only on a small scale. The project may also have to contend with politicians and other interest groups whose domain of control will be delimited by the proposed consolidation of the RECs.

In view of these possible consequences, the project would do well to carefully assess and implement its plans. First, the impression that the selection of the pilot region is an indictment of the cooperatives' performance must be avoided. Instead, the chosen region's potential for modeling institutional capabilities for change should be emphasized. Second, the objectives of consolidation and reorganization must be sufficiently explained and the criteria for selection clarified. Third, support for the program must be mobilized. Networks of power and authority that will affect and be affected by the rehabilitation program should be identified and mechanisms explored accordingly in order to avert or minimize conflicts with such groups.

The third component is essentially an expansion of the rehabilitation efforts into the rural countryside. By

the time this phase is implemented, lessons from the pilot phase will presumably have been learned. Thus, activities are similarly expected to result in rate structuring of the RECs and their consolidation into larger units.

Organizational and political problems similar to those in the pilot phase are likely to be encountered, albeit on a larger scale. Particularly dominant will be the aggregation of political interests and demands at the national level. Already, some cooperatives have resorted to the mass media in order to mobilize support for their continued operations. Consequently, the NEA's capabilities for managing these problems on a wider scale must be adequately strengthened. An alternative strategy, however, would be to implement the expansion phase in stages. The criteria for this sequential approach may be derived from the lessons of Component II. Moreover, these strategies may be complemented with appropriate information dissemination campaigns which should emphasize the need for rehabilitation in order to achieve affordable and reliable service. The project should dispel particularly the misconception that rehabilitation might mean the stoppage or curtailment of electric service in certain areas.

As for the intended beneficiaries of this component, it is quite unlikely that people in the rural areas will not react favorably to the improvement of the electrification program of the government. Results of the NEA impact study both in 1977 and 1983 indicate that the rural population have a favorable response to the program. Majority of the consumers, about 62 to 65 percent, feel positive towards their cooperative. This trend seems to hold on even today. Some 46 informants from three cooperatives expressed similar views when interviewed in May 1988. While only 34 percent had the chance to attend the annual cooperative meeting and about 72 percent expressed some complaint or another about the services extended to them, still close to 64 percent found their RECs credible. They were at least appreciative of the efforts of their RECs to light their homes and maintain good service. With more of the benefits of electrification filtering to the rural folk by the third phase of the project, there seems to be no doubt that they will have a high regard for the cooperative in the years to come.

This positive valuation can further be transformed into a more active participation in the affairs of the REC. In fact, a Pampanga cooperative has started to

pursue this strategy. It has launched a concerted drive to inform the local people of the nature of the cooperative. High in their agenda are the following points: the aims and ownership of the cooperative, the benefits that may be derived by members and consumers, as well as their rights, privileges, and responsibilities. With the assistance of the local government and religious leaders, the REC officers are confident that the people will develop a greater concern for and commitment to their cooperative.

Although major obstacles have been ruled out, certain factors which may adversely affect implementation merit consideration. Insofar as the installation of major physical infrastructure is concerned, the location of the RECs may be of consequence. For one, pilferage of system commodities may be more likely in economically depressed areas. Similarly, fears have been expressed that the government's rural development efforts may be disrupted in some locales. Military operations, for example, may necessitate that implementation be postponed or delayed. There is also the possibility that the project's physical installations may be sabotaged for political reasons. Armed rebel groups such as the New People's Army are often tagged as suspects particularly by the military, as they were when two major bridges in the Bicol area were blown up not too long ago.

On the other hand, there is reason to be hopeful that these forces may even actively support the project. From interviews with key informants of three electric cooperatives (Batangas, Laguna, and Pampanga), it was learned that for the past five years the cooperative's operations had not been interrupted by the NPA. In fact, in remote barrios and far-flung areas where power lines were being installed, suspected members had reportedly served as guides in negotiating the terrain. Respondents who were once assigned to equally politically unstable areas in Mindanao expressed similar observations. They attribute this show of goodwill to two reasons: 1) the NPAs must have perceived rural electrification as a "pro-people" project, and 2) the NPAs believed that disrupting the delivery of basic services to the people would be counterproductive to their efforts at winning the masses over to their side. Whether or not these fears and assurances are tenable, project designers and implementors would be wise to anticipate the effects of local political conditions on their operations.

SPREAD EFFECTS: THE DIFFUSION OF INNOVATION.

A crucial element in the design and appraisal of the rural electrification project is the extent to which the program will be able to extend its benefits beyond the initial targets and the degree to which these results are sustained.

The project contains several features which address both of these concerns. First, the planned pilot and expansion phases will ensure that benefits are not limited to a given region but are spread throughout the countryside. Second, although the RECs are the immediate targets and beneficiaries of the rehabilitation program, other sectors also stand to gain in the long run. Household consumers, enterprises, and communities will benefit from the conveniences and economic activities that may result from a more affordable and dependable power service. Third, less tangible though no less important is the potential spread effect on other public service institutions. In particular, the program's conscious efforts to reduce, if not eliminate altogether, inefficiencies and opportunities for graft and politicization should help the new government mold an ethics of public service and accountability. Fourth, benefits are likely to be sustained through the program's efforts at retraining the staff and institutionalizing improved financial and management systems.

These design features notwithstanding, the project may implement other measures to achieve a better spread and sustainability. To this end, the case of the Guimaras Electric Cooperative may provide some valuable lessons (Navarro, 1988). With a 15.3 million loan and a membership of 2,335, this island cooperative off the coast of Iloilo has been able to keep the system viable. It has reduced its power rates (from P3.20 to P2.70 per kwh) and has maintained up-to-date payments of its quarterly amortizations. Moreover, the cooperative has lowered its systems losses, increased its collection efficiency, and considerably reduced the incidence of pilferage.

The REC's impressive performance has been attributed to: (1) the cooperative and responsible attitude of local officials who provide the needed support and resources for the cooperative without meddling into the latter's management affairs; (2) the conscientious and honest officers of the cooperatives; and (3) the competence of and esprit de corps or sense of belongingness among the staff.

The Guimaras experience indicates that sustainability can be achieved partly by depoliticizing the program but at the same time achieving adequate support and cooperation from local officials. A delicate balancing between the local government and the RECs must be maintained in matters relating to policy decisions, systems operations, maintenance and enhancement.

The case also suggests that project success largely depends upon the sense of commitment and dedication of management and staff. This point was in fact singled out by key informants (an NEA officer and three General Managers) as one of the most important ingredients for sustaining project gains. They strongly urged that efforts should be made to create conditions as favorable as possible for the germination and development of an ethics of public service. One informant cited a case in which the local parish priest went to the extent of mentioning in his sermons the immorality of pilferage and the need for honesty in public office. Another suggested that this moral ideal may be realized by perhaps holding intensive and continuing values reorientation programs for would-be officers and directors. It is hoped that if officers serve as good role models, their subordinates would in time follow the example.

The importance of financial management to project sustainability is likewise demonstrated in this case. It is clear that the proposed rehabilitation program must include adequate control measures and mechanisms to increase the accountability of the management and staff. Regular monitoring and information sharing systems should be established to ensure "transparency" in the RECs' operations. A modicum of "institutionalized suspicion" as it were (Worsley 1971) should therefore be operative. In one cooperative in Batangas, for example, financial management reportedly improved after fool-proof procedures for reading meters and recording bills were instituted, proper records maintained and closely checked, and special organizational units introduced.

Finally, the Guimaras experience illustrates that RECs in less developed or poverty areas can be as efficient and effective as any cooperative in more urbanized centers. Thus, in decisions regarding the composition of the consolidated RECs and the location of the operations centers or central REC offices, promising cooperatives in less urbanized areas should be given due consideration and should be adequately represented and supported. A more geographically balanced development

plan may thus need to be introduced.

The proposals just outlined may be realizable primarily at the program level. For these efforts to continue, the government's support for the program would be required. It may be assumed that the government will somehow express its concern for electrification so long as the political need to demonstrate its sensitivity to rural conditions remains. After all, the image of an electricity-lighted nipa house is at once rustic, modern, and dramatic.

Sustainability would be better assured, however, if the government is committed to the project and realistic about its goals and if it exercises the political will to implement electrification. For a start, the government needs to clarify the role of rural electric cooperatives and the extent to which they will be developed in the context of the overall rural energy development plan. This way, goals regarding system maintenance and expansion may be realistically set and projections of additional equipment, operational expenses, and even profit margins accurately drawn up. As it is, conflicting projections are commonly found. The NPC, for example, expects a 5.5 percent power demand for Luzon from 1989 to 1990, while MERALCO and the Department of Trade and Industry place the demand at 8 percent. Clearly, ambiguous goals coupled with unrealistic projections will have unnecessary consequences in the generation and allocation of resources both at the NEA and the REC levels.

SOCIAL CONSEQUENCES AND BENEFIT INCIDENCE

An assessment of the project's social costs and benefits must consider the direct and immediate results on the one hand and the indirect and long-term consequences on the other. As previously mentioned, the impact of the project will be directly and immediately felt at the level of the RECs and the administering agency, the NEA. There is no doubt that the project will incur some social costs. Rehabilitation is likely to result in retrenchment and, consequently, in unemployment for some, and fewer privileges for others. An attendant consequence is the risk of escalating political resistance against the NEA, particularly among the managers and directors. This group includes mostly middle-class professionals (lawyers, doctors, accountants), teachers, and landowners. In the

local political arena at least, leadership positions in the RECs are major stepping stones to power and influence. Thus, in requesting for the resignation of the Board of Directors and General Managers of some RECs, NEA will be generally perceived as political contestants out to force the exit of others and provide entry to their own men. The stiff opposition already being shown by some RECs toward NEA's loan program may be seen in this light.

To be sure, this problem is more than merely political. Local oppositors feel that they have valid grounds for their objections. First, they maintain that financial criteria should not be the sole consideration in evaluating the RECs' performance. They hold that achievements in terms of system expansion must likewise be considered if only because the latter was a major goal which RECs were in fact mandated to pursue. Second, they emphasize that discrepancies between the NEA's loan accounts and the RECs' books do not necessarily reflect any anomaly. Some differences are reportedly due to pricing variations from the time goods are purchased to the time they are received by the REC. Thirdly, in the absence of any financial audit in the past, they note that allegations of dishonesty cannot be proven and are, therefore, fruitless. Clearly, if the seeming conflict is to be avoided or resolved, these objections may have to be addressed and evaluated.

These costs appear minimal when compared to the immediate socioeconomic returns that will accrue once a system turn-around is achieved. Besides, support from other sectors may be mobilized if the project's benefits are clarified. These benefits include a more efficient operations system, a well-trained management group, and a more affordable and reliable service. A more balanced development of areas may also be achieved through a well-planned distribution of the reconsolidated RECs.

Less evident and more difficult to establish are the project's long-term socioeconomic consequences. An important consideration is the possibility that a break on system expansion will limit the rural poor's access to electrification. Preliminary interviews indicate that some REC managers feel that system expansion need not necessarily drain a cooperative's finances and therefore must not be totally sacrificed. This view merits examination. The extent to which some RECs have been able to expand yet remain financially viable, along with the factors that allow such cases, must be empirically determined. If these alternatives are feasible within

limits, mechanisms can also be established to provide incentives to RECs which are able to extend their systems without taxing their financial performance.

Also foreseen as the long-term benefit of the project is the stimulation of rural development, industry, and employment. Thus far, there is not enough evidence to indicate that indeed electrification is or has been the principal catalyst to rural development. Rural enterprises, employment, and agricultural productivity are not likely to increase as a direct result of electrification. The anticipated growth of the furniture industry in Pampanga, livestock in Batangas, and fishing in Laguna, to name a few, will not come about through electrification alone. These outcomes are equally dependent upon other factors such as an area's level of development, the availability of capital and other financial resources, and the implementation of complementary programs which stimulate the use of electric power (Mandel et al., 1980).

Equally uncertain are the benefits that the rural poor are expected to get from electrification. In fact, a more realistic appraisal would show that majority of rural households do not have sufficient resources to invest in alternative, income-generating uses for electricity, let alone resources to even pay for the initial costs of intallation. Given these uncertainties, therefore, the program can only be more cautious and realistic as far as its goals and claims regarding electrification's impact on poverty are concerned.

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APPENDIX A

DISTRIBUTION OF INFORMANTS INTERVIEWED FOR THIS REPORT

	<u>n</u>
NEA Officials	1
General Manager of Cooperatives	4
President of the Board	1
Consumers	
Batangas	16
Laguna	15
Pampanga	15

ENVIRONMENTAL ANALYSIS

Since this project basically involves system upgrading rather than system expansion, the environmental impact will be limited. In fact, there will be a positive impact because systems rehabilitation will make electricity safer for consumers and the general population. Moreover, the improved power service in rural areas is expected to improve rural quality of life, employment, sanitation, etc. Likewise, the training component will have a positive effect on systems operation and safety. However, it is also expected that the streamlining of NEA and the RECs will result in the loss of more than two or three thousand jobs nationwide over a three year period. However, this will be more than offset by the increased employment opportunities generated by reliable electric service.

Since this project is concerned only with the distribution of electricity, the direct environmental impact of the project is limited to the clearing of right-of-way and the electric distribution lines together with aesthetic considerations.

Installation (replacement) of poles will necessarily require a small disturbance of soil with a localized and temporary impact. Some removal of trees along the narrow right-of-way may also be necessary. Small amounts of grasses or bushes may be removed during pole installation. Disturbance of wild life habitats except for small amounts of tree pruning and removal is expected to be temporary and minimal.

The Project will purchase approximately 48,000 utility poles locally and this procurement may result in an increased harvesting of forest products to meet the demand and a subsequent loss of forest cover. It is difficult to estimate the hectareage that may be cleared without knowing the stocking density of the forest source. For instance, a pure plantation grown for poles could produce over 2,000 poles/ha, while a secondary forest may only produce 100 poles/ha. Nevertheless, harvesting of poles may cause limited negative impacts on specific sites, i.e., soil erosion and loss of forest cover (wildlife habitat and watershed cover). However, the Department of Environment and Natural Resources (DENR) has regulations which govern the harvesting of timber products, including soil conservation practices and replanting; yet, the enforcement of these regulations is often sporadic. Thus, the Project should focus attention on the procurement action and the planned harvest of forest products in order to place public pressure on DENR staff to enforce existing regulations.

By advertising the procurement action and the award in advance, including the price paid per pole, it is possible that suppliers will invest in other tree species which are appropriate for utility poles. There are several tree species suitable for poles which can be grown to commercial size within twelve years, i.e., Eucalyptus and Acacia species. Unfortunately, there are few entrepreneurs currently investing in pole production.

ECONOMIC ANALYSIS

The economic benefits from the Rural Electrification Project can be analyzed from three perspectives: First, the reduction in systems losses as a result of the provision of commodities and TA will immediately benefit selected RECs and will help them become profitable enterprises. Second, as a consequence, the social costs of power outages will be reduced, a benefit that will be realized by ultimate electricity consumers. Third, more reliable power will encourage the growth of productive agricultural and non-agricultural activities, leading to higher employment and incomes. Assessment of the Project using net present value, benefit/cost ratio and internal rate of return indicates its economic viability.

Cost of Systems Losses: RECs in the Philippines are almost crippled by huge systems losses. In 1987, National Electrification Administration records show that 110 RECs had an aggregate systems loss of 640,626 megawatt-hours (MWH)^{1/} valued at ₱569.3 million (US\$27.8 million). These losses represent 24.6 percent of the total amount of power purchased or generated by the RECs. Some of the losses are accounted for by technical problems while others are due to consumer pilferage. (How much of the systems losses are due to technical deficiencies and how much are due to poor administration which allows non-payment of bills and pilferage are not known.) By providing commodity and technical assistance inputs to correct technical deficiencies, improve accuracy of the reading of electric consumption, and strengthen REC management, the Project will drastically reduce the cost of systems losses currently borne by RECs.

Social Cost of Power Outages: Frequent and long power outages are the hallmark of the inefficiency of the power generation and distribution system in the Philippines. For 1988, the National Power Corporation (NPC) anticipates that the total time of brownouts will exceed 500 hours for industrial users and 2,700 hours for residential customers. These represent outages resulting from the limited generating capacity of NPC. Add to these the outages resulting from the various inefficiencies of RECs.

Munasinghe^{2/} has developed a model that computes the social costs of outages, both for industrial and residential users. Industrial outage costs represent (1) the value of the spoiled product in the process of being produced or in storage for the duration of the outage, and (2) the opportunity

^{1/} Defined as MWH generated or purchased by the REC less MWH sold less MWH consumed by the REC.

^{2/} Munasinghe, Mohan. The Economics of Power System and Reliability. Baltimore: Johns Hopkins University Press.

cost of the idle factors of production during the outage and a subsequent restart period. Residential outage costs in periods of the households' electricity-dependent leisure are estimated by their average hourly earnings multiplied by the duration of the brownouts.^{3/}

A study by Arroyo^{4/} applied the model to industrial and residential electricity users in Marikina, Metro Manila in 1983 and found that the year's brownouts totalling only 7.622 hours engendered considerable social costs. A community of some 39,000 households incurred social costs of roughly P2 million (about P4 million in 1988 prices) in foregone earnings in one year. On the other hand, the 1,049 affected industrial and commercial enterprises lost roughly P12 million (about P24 million in 1988 prices) as a result of the power outages during the year. For one hour of power outage in 1983, the social cost for the household is estimated to be P7 and for the enterprise, P1,500. The respective figures for 1988 are roughly P14 and P3,000.

Note that the estimation period (1983) is a year of economic depression with severe unemployment and large underutilized industrial capacity. Under present conditions of upturn, the above figures are bound to increase substantially.

Despite the obviously substantial disincentive effects and social costs of frequent outages, there has been no attempt to quantify their impact on a nationwide basis. Nor has there been any effort to monitor the frequency and duration of such outages. Lately, the NPC has been deliberately discontinuing the provision of electricity to some RECs to compel them to pay their arrearages. The estimation of the social costs of outages, therefore, has been made more complicated by this addition of "nontechnical" causes of brownouts.

General Development Impact: While its impact is not automatic and varies widely, rural electricity has been found to have positive impact on economic development.^{5/} In agriculture the use of electricity tends to be in

^{3/} The negative effect of outages on household maintenance and nutrition-related activities are not considered significant and are ignored by the model.

^{4/} Arroyo, Cristino K. III. The Social Cost of Power Failures: A Case Study. Undergraduate thesis, University of the Philippines, School of Economics.

^{5/} Wasserman, Gary and Alice Davenport. Power to the People: Rural Electrification Sector Summary Report. A.I.D.

processing and in supporting services, such as equipment repair, rather than in direct production. Larger enterprises in commerce and industry, especially in market towns and more-developed areas, seem to benefit the most.

Net Present Value, Benefit/Cost and Rate of Return Analyses: Reduction of systems losses provides a strong justification for the Rural Electrification Project. The justification is sufficient to make it unnecessary to attempt to quantify the vague areas of social costs of power outages and general development impetus. The monetary value of these losses are available for almost all RECs and can be used as basis for reckoning the benefits that can be derived from the Project.

For purposes of economic analyses, the following are assumed: (1) The total project economic cost of US\$60.4 million (without any adjustment for inflation, the budgetted US\$54 million plus a premium of US\$6.4 million on the US\$40 million in planned dollar expenditures to allow for an estimated 20 percent overvaluation of the peso in relationship to the US dollar) will be disbursed in equal amounts annually over a period of 5 years. Using a discount factor of 15 percent as prescribed by the National Economic and Development Authority, the total discounted economic cost is US\$46.6 million. (2) The economic benefits of the Project equal the monetary value of systems loss reduction, i.e. represent power that would not be otherwise available. This implies the loss reduction came from technical losses and/or equal power that without the project would not be available, e.g. due to further deterioration in the system or even closure of non financially viable RECs.

Four cases--assumed reduction of 15, 20, 25, and 30 percent of the total systems losses of RECs--are presented.^{6/} At current prices with the reduction being valued at peso 1.5 per kwh, i.e. selling price minus marginal cost and allowance for equipment replacement costs, and using an exchange rate of US\$1 = P20.50, the equivalent annual values of these reductions are respectively US\$7.0 million, US\$9.4 million, US\$11.7 million, and US\$14.1 million. In the analysis below it is assumed that one quarter of the reduction is achieved in year 3, the amount of reduction steadily improves to reach full reduction in year 6, and the reduction continues on for another 10 years.

The net present value (NPV), benefit/cost ratio (BCR) and internal rate of return (IRR) of the Project, assuming the four alternative cases of systems loss reduction, are shown below:

^{6/} The assumed reductions reflect what the Project can easily achieve. Reductions much beyond 30 percent are not defensible since limits exist to the coverage of the Project and how far a given REC's losses can be reduced.

	<u>Reduction in Systems Losses</u>			
	<u>15 Percent</u>	<u>20 Percent</u>	<u>25 Percent</u>	<u>30 Percent</u>
Net Present Value (NPV) (US\$M)	(18.874)	(9.643)	(.411)	8.820
Benefit Cost Ratio (BCR)	0.59	0.79	0.99	1.19
Internal Rate of Return (IRR) (Percent)	5.3	10.5	14.8	18.7

Overall, the Project is economically viable, as indicated by the relatively high NPV, BCR and IRR. All the three investment criteria require a minimal reduction in systems losses of just over 25 percent to make the Project feasible, i.e., positive NPV, BCR greater than 1, and IRR exceeding the social discount factor of 15 percent.

The NEA ₱500 Million Relending ProgramI. BACKGROUND

The Government of the Philippines has approved the release of ₱500 million representing additional equity to NEA for 1987 which will be relented to the RECs for the settlement of their power arrearages with the National Power Corporation (NPC).

With the repayment of these power accounts, the RECs will be relieved of NPC's eighteen percent surcharge on arrearages and they can avail of its three percent prompt payment discount plus the additional incentive of two-months condonation on interest. If implemented as conceived, the relented amount can be a determining factor in turning the subsequent performance index of these cooperatives into milestones. Failure to attain pre-set targets will, however, drag these cooperatives into further distress.

To ensure the RECs' faithful compliance with the terms and conditions of the loan under the program, the NEA Board approved the ₱500 Million Relending Program on January 15, 1988 through Resolution No. 4, with the strict condition that positive measures be laid down.

II. PROGRAM APPROACHES

Considering that the earmarked amount of ₱500 million is not enough to assist all cooperatives with NPC arrearages, program beneficiaries were selected on the basis of the following general criteria:

- a. Total NPC arrearages as of December 31, 1987.
- b. Total NEA arrearages as of December 31, 1987.

The program is divided into two parts:

Part I - Release of loans to RECs, subject to the terms and conditions of the loan contract. This group includes seven RECs identified on the basis of the above general criteria. NEA shall closely supervise and monitor the operation of these cooperatives to assure adherence to loan covenants. A NEA project supervisor shall be assigned to these RECs. The RECs under this category and its NPC arrears are:

<u>REC</u>	<u>NPC Arrears</u> <u>(₱000)</u>
1. Camarines Sur IV	8,750
2. Pampanga	2,993
3. Tarlac I	19,337
4. Batangas I	14,406
5. Central Pangasinan	13,000
6. Tarlac II	8,575
7. Batangas II	<u>15,286</u>
TOTAL	<u>82,347</u>

Part II - Release of loans to RECs with more serious problems identified than the above general criteria, subject to stricter approaches. Identified problems basically refer to high systems loss, very low collection efficiency, institutional problems and violations of REC/NEA policies and guidelines.

There are twelve RECs identified under this group. This second approach shall entail the exercise of the enforcement powers and remedies provided for in PD 1645. Basically, this is the foreclosure of a REC or full takeover of its operation and management by the NEA. The RECs under this category and their NPC arrears are:

<u>RECs</u>	<u>NPC arrears</u> <u>(P000)</u>
1. Pampanga I	51,240
2. Nueva Ecija II	30,912
3. Nueva Ecija I	46,591
4. Nueva Ecija III	29,888
5. First Laguna	22,356
6. Albay III	16,131
7. Pampanga II	62,389
8. Bataan	57,543
9. Albay II	38,796
10. Camarines Sur II	27,327
11. Camarines Sur III	13,452
12. Pampanga III	<u>21,028</u>
TOTAL	417,653

III. ACTION PLANS

A. For Group I RECs

1. Secure NEA Board approval on the release of the loans.
2. Call officers of the affected RECs for the signing and for a briefing on NEA expectations.
3. Advise NPC accordingly.
4. Target date: Immediately after Board approval.

B. For Group II RECs

1. Secure NEA Board approval for the exercise of the enforcement powers and remedies granted to the NEA under Sections 3 and 5 of Presidential Decree No. 1645.

2. To minimize resistance from the affected RECs, the assistance of public and private offices shall be given prime emphasis. A Memorandum of Agreement between NEA and the local leaders of the concerned area for the purpose has been prepared accordingly.

3. Advise NPC accordingly.

4. Target date: Immediately after Board approval.

C. Takeover Strategies

I. Pre-Takeover Activities

a. The Relending Committee shall conduct a briefing for the NEA Management Teams on the takeover of the twelve RECs. A NEA Management Team is composed of a team leader who shall act as the general manager and project supervisor, and these others who shall be deployed for financial, technical and institutional functions. The briefing shall aim to lay down the detailed plans of action for the takeover of each REC.

b. Series of dialogues with local civic leaders with the Administrator and/or NEA officials will be scheduled to ensure full support for the takeover. The dialogue includes the signing of a Memorandum of Agreement between NEA and provincial officials/civic leaders, including Congressmen, Governors, Mayors and any national officials from the province.

II. Actual Takeover

Teams: The following strategies shall be undertaken by the NEA Management

1. Institutional Strategies

a) Massive Information Dissemination Drive:

- Radio broadcasts
- Press releases
- Meetings with civic/religious/barangay officials

b) Organization of Municipal Electrification Committees (MECs), consisting of nine sectoral representatives:

- Education
- Business
- Civic
- Religious
- Farmers
- Youth
- Barangay Councils
- Government Employees
- Media

The MECs shall be utilized in information dissemination activities, collection drives and anti-pilferage campaigns.

c) Total Employee Re-Alignment:

- reorientation/training
- revamp/retrenchment

Goals are:

- i) to trim down the number of employees to a functional minimum to reduce administrative cost and to optimize individual utilization; and
- ii) to weed out undesirable employees.

d) Organization of Barangay Power Associations (BAPAS)

Goals are:

- i) to improve collection efficiency
- ii) to reduce systems loss
- iii) to strengthen mass base.

2. Technical Strategies

a) General Goals:

- i) to reduce systems loss to a maximum of 30% for the first six months and to 25% after 12 months.
- ii) to maintain adequate, efficient and reliable service.

b) Activities to be undertaken:

- i) recalibration/change of consumers kwh meters
- ii) transformer inventory
- iii) rehabilitation/clearing of lines
- iv) operation of organized BAPAS
- v) system upgrading

3. Financial Strategies

a) General Goal - Attainment of a minimum monthly collection of an amount equivalent to 95% of the current revenue for the first six months; then 99% in the succeeding months through strict implementation of RECs disconnection policy.

b) Cost Reduction Program

- i) no capital expenditure without NEA approval
- ii) employee retrenchment

- iii) cut down on overhead
- iv) availment of NPC 3% prompt payment discount (ppd)
- c) Strict adherence to NEA approved rates schedule and cash budgets.

4. General Strategy

In case of resistance from the electric cooperative on the NEA takeover, the Relending Loan shall be withdrawn, NPC disconnection shall also be immediately effected.

ANNEX M

Planned Computer Applications

The primary objective of computerizing financial utility applications is to accomplish financial and accounting utility tasks in an accurate and timely manner. If correctly designed and utilized, these applications result in better controls and improved cash flow, improved and meaningful reports for management, reduced manpower and lower costs than non-computerized methods. Descriptions of typical applications follow:

o NEA Applications

1) NEA Loan Management System

Presently, NEA loan records are manually maintained for all loans made to RECs. Because there are a large number of transactions, preparing loan information and reports is a time consuming and tedious task. Statements are not routinely prepared and the NEA and REC loan records do not reconcile. Thus, RECs do not know their actual loan obligation.

The objective of a computerized loan management system is to: reduce the clerical workload of the basic accounting procedures, aid middle and top management making loan decisions and monitor and control loans. This system will facilitate recording, reporting and analyzing of loan accounts; generate loan status reports for each REC and foreign creditor; calculate interest in current and accrued amounts; provide timely information on past due payments and receivables; and generate periodic and exceptional management reports.

2) Inventory Control System

The objective of the Inventory Control System will be to provide an integrated approach to requesting materials and assets, satisfying RECs requests through the existing inventory or through the procurement cycle, controlling the storing, issuing a replenishing process, and monitoring payments and receipts of goods acquired and delivered to the RECs.

The majority of loan releases from NEA to individual RECs are or will be in the form of assets and goods such as meters, line transformers, voltage regulation equipment, etc. Furthermore, few RECs maintain detailed records of these assets. Thus, an effective inventory control system for the control of assets as they are passed to the RECs is needed.

3) NEA General Ledger/Accounting System

Currently, the NEA uses a manual accounting system. For many reasons, such as the high volume of information, a manual accounting system cannot effectively and efficiently meet NEA management's informational needs.

However, an automated general ledger system would be able to meet NEA information needs while remaining consistent with sound accounting principles. This system must be able to generate financial statements for current and past year operations and budgeted figures, aging schedules of receivables and payables, schedule of inventories (semi-annual), aging schedule of advances to officers and employees, and other relevant accounts.

4) Financial Management Information System

The objective of the financial management information system will be to take NEA beyond the data processing stage. This system will be designed to support management planning and decision-making, and will be able to access all of the information on NEA's data base to permit ad-hoc reporting

Currently, most of the RECs do not prepare regular reports other than the Management and Financial Status Report (MFSR) required by NEA. Although this report provides some information, a management information system would facilitate the generation of more detailed information for the NEA and Board review. Management reports in this category include:

- Financial analysis and highlights;
- Billing frequencies, demand, and cost data for tariff analysis and design;
- Comparative reports on systems losses, disconnects, and reconnections;
- Consumption and payment characteristics by user type, region, and season; and
- Progress of campaign on KWH inspection and pilferage apprehension.

o RECs Applications: Consumer Accounting and Record Keeping Systems.

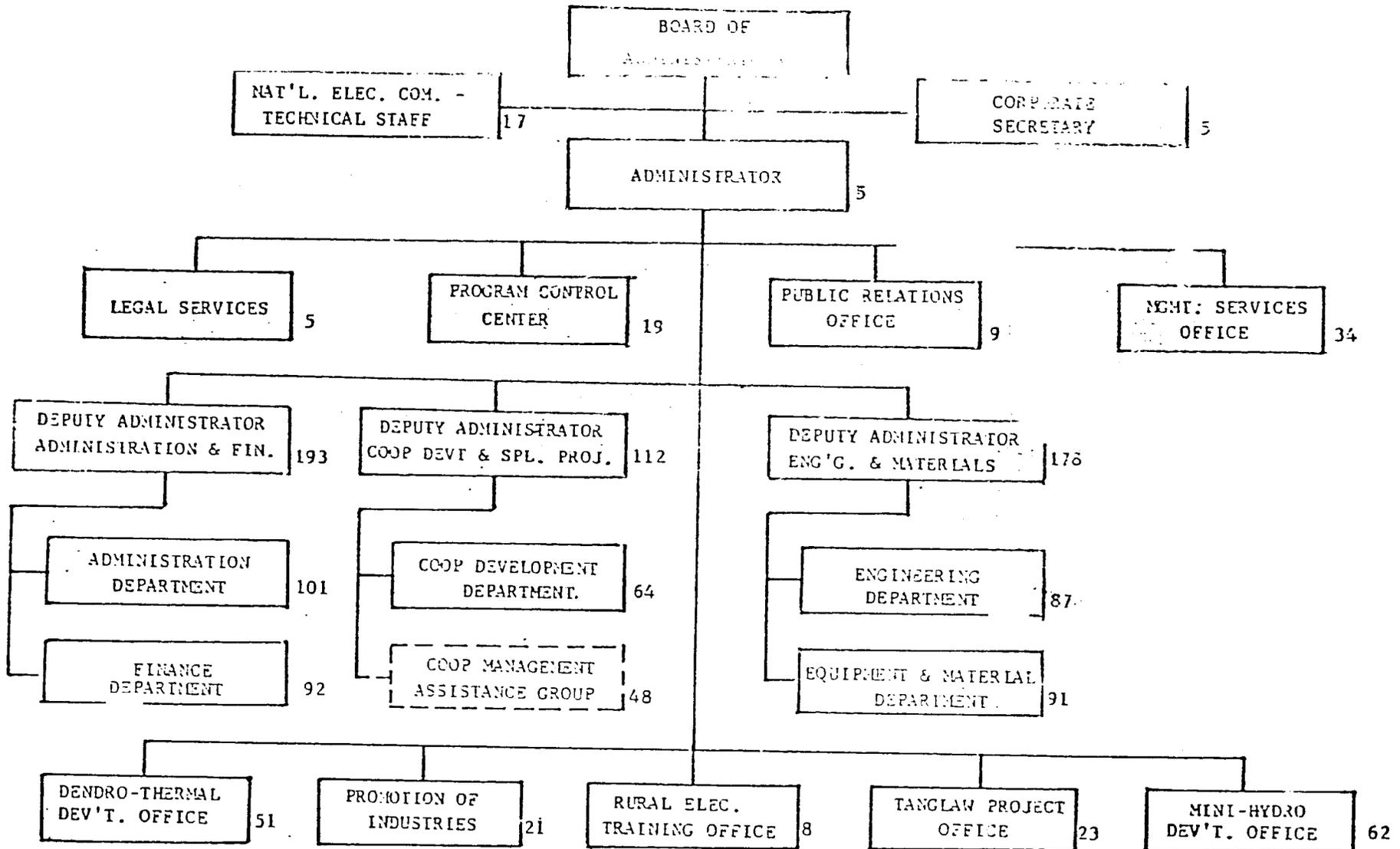
Only a few RECs have a computerized billing system. Most RECs use antiquated billing machines which result in increased billing errors and difficulty in controlling and maintaining accounts receivable.

The implementation of a standard billing and accounts receivable system at all participating RECs will improve the effectiveness of the REC to prepare timely and accurate bills, maintain an accurate customer billing and payment history, reconcile power bills, and generate automatic aging schedules and collection information.

The main objective of the Accounts Receivable system will be to maximize collections of power sales and to minimize losses from bad debts.

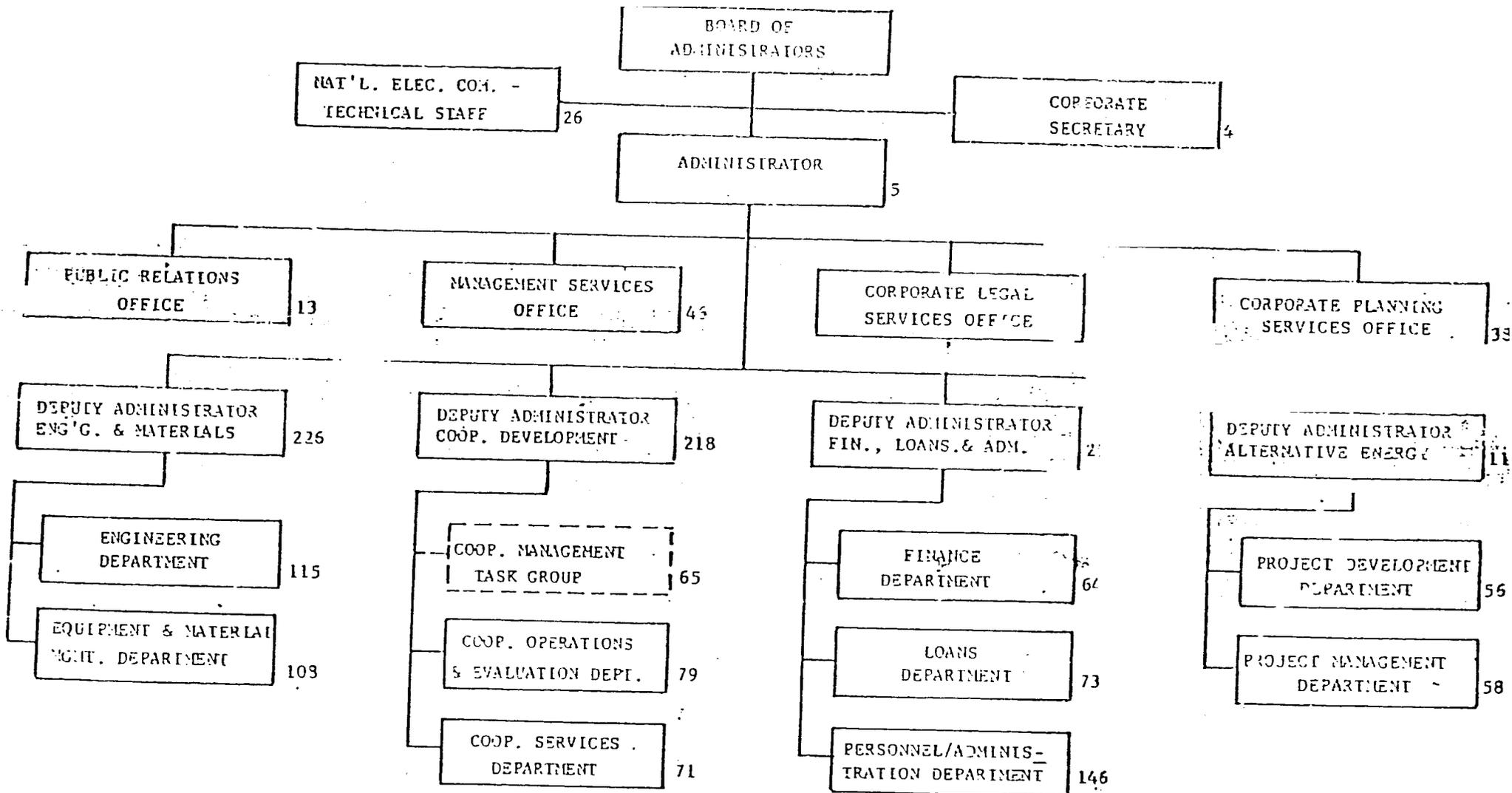
NEA PRESENT SET-UP

FILED-12 POSTING 742



NEW PROPOSED ORGANIZATIONAL CHART

TOTAL PLANNED POSITION - 992



AMICY 9

DETAILED BUDGET

Table 1

Commodities

1. Compacs 1, 2 and 4			\$29,777,000
Compac 1	\$431,540 x 20	8,631,000	
Compac 2a	\$126,300 x 19	2,400,000	
2b	\$305,240 x 19	5,800,000	
Compac 4	\$431,540 x 30	12,946,000	
2. Computer equipment for the RECs			1,080,000
93 RECS x \$10,000 per REC		930,000	
Provision for System support/ software procurement/ modification		150,000	

Table 2

Technical Assistance Budget

TECHNICAL ASSISTANCE

1. <u>Long-term Contractors</u>		\$ 2,088,000
Two resident advisors (\$460,000 x 4 years)	1,840,000	
One systems advisor (\$248,000 x 1 year)	248,000	
2. <u>Local Accounting Firms</u> (\$300,000/year x 4 years)		1,200,000
3. <u>Local Engineering Firms</u> (\$225,000/year x 4 years)		900,000
4. <u>Short-term Advisors</u> (\$160,000 x 4.5 years)		720,000
5. <u>Procurement Specialists</u> (4 person months at \$15,000)		<u>60,000</u>
	<u>TOTAL</u>	<u>\$4,968,000</u>

Table 3

Long-Term Technical Assistance Contractors

	<u>Year One</u>	<u>Year Two</u>	<u>Total</u>
<u>Direct Salaries</u>			
1. Resident Advisor - Institutional	\$ 70,000	\$ 70,000	\$140,000
2. Resident Advisor - Engineering	60,000	60,000	120,000
	<u>\$130,000</u>	<u>\$130,000</u>	<u>\$260,000</u>
<u>Post Differential</u>			
3. 15% x 1 and 2 above	19,500	19,500	39,000
<u>G & A</u>			
4. 25% on 1 and 2 above	32,500	32,500	65,000
<u>Fringe Benefits</u>			
5. 11% of 1 and 2 above	14,300	14,300	28,600
<u>Overhead</u>			
6. 85% on 1 and 2 above	110,500	110,500	221,000
<u>Air Fares and Per Diem</u>			
7. Field Staff plus family (8 x \$2,200)	17,600	-	17,600
8. R&R to US (8 x \$1,000) (Manila-US-Manila: 1 trip per family member)	-	8,000	8,000
9. Local Travel (per diem) 2 x 120 days at \$50	12,000	12,000	24,000
10. Local Travel (transport) 2 x 24 trips at \$75	3,600	3,600	6,200
11. Visa Fees, Insurance, Shots, Airport Taxes, etc.	4,000	1,000	5,000
<u>Education Allowance</u>			
12. 2 children x 4,000/year x 2 residents	16,000	16,000	32,000
<u>Medical</u>			
13. 2 x 500/year x 2	1,000	1,000	2,000
<u>Shipping and Storage</u>			
14. Shipping \$15,000 x 2	30,000	-	30,000
15. Storage \$3,000 x 2	6,000	6,000	12,000
16. Auto Shipping at 5,000 x 2	10,000	-	10,000
	<u>\$ 31,000</u>	<u>\$ 21,000</u>	<u>\$ 52,000</u>
17. Communications	\$ 2,500	\$ 2,500	5,000

	<u>Year One</u>	<u>Year Two</u>	<u>Total</u>
Housing and Utilities			
18. Rent 2 x 750 x 12	\$ 18,000	\$ 18,000	\$ 36,000
Electricity 2 x 500 x 12	12,000	12,000	24,000
	<u>\$ 30,000</u>	<u>\$ 30,000</u>	<u>\$ 60,000</u>
Total 1 thru 18	\$424,500	\$401,900	\$ 806,400
Fee 10% of Total	<u>42,450</u>	<u>40,190</u>	<u>80,640</u>
<u>GRAND TOTAL</u>	<u>\$466,950</u>	<u>\$442,090</u>	<u>\$909,040*</u>

*Average yearly cost is \$460,000.

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Table 4

Local Accounting Firm(s) - Annual Cost

<u>Position</u>	<u>Level of Effort (months)</u>	<u>Burdened rate/month</u>	<u>Total</u>
Team Leader - acctg/finance	12	\$3,500	\$ 42,000
Sr. Manager - social soundness	6	3,500	21,000
Analysts (4)	48	2,400	115,200
General Professionals (4)	48	1,800	86,400
Support (2)	24	500	12,000
	<u>Sub-Total</u>		<u>\$276,600</u>
<u>Out-of-pocket expenses</u>			
Travel, lodging and support			<u>23,400</u>
	<u>TOTAL</u>		<u>\$300,000</u>

Table 5

Local Engineering Firm(s) - Annual Cost

Cost per firm for O&M surveys		
\$15,000 per O&M survey x 4 surveys per year = \$60,000		
Total Cost (\$60,000 x 3 firms)		\$180,000
Additional engineering assistance		<u>45,000</u>
(\$15,000 per firm x 3 firms)		
	<u>TOTAL</u>	<u>\$225,000</u>

Table 6

Training

1. Training module development		\$ 75,000
- Technical training	\$25,000	
- Managerial training	25,000	
- MIS	25,000	
2. Cost of Conducting Courses at NEA 6 courses/year at \$5,000 x 4 years		120,000
3. Tuition for training at local institutes 25 participants at \$1,000 x 4 years		100,000
4. Other training costs		<u>25,000</u>
	<u>TOTAL</u>	<u>\$320,000</u>

Table 7

Project Operations, Management and Monitoring

1 PSC at \$105,000 x 4.4 years	\$462,000
1 PSC at \$95,000 x 4.4 years	418,000
1 FSN secretary at \$4,545 x 4.4 years	<u>20,000</u>
<u>TOTAL</u>	<u>\$900,000</u>

ANNEX D

CERTIFICATION PURSUANT TO UTILIZATION OF GRAY AMENDMENT ORGANIZATION

I, Malcolm Butler, principal officer of the Agency for International Development in the Philippines, have fully considered the potential involvement of small and/or economically and socially disadvantaged enterprises, and do hereby certify that U.S. technical assistance required under the project will be provided through open competition, with special consideration given to firms submitting proposals which utilize the resources of small and/or disadvantaged firms. In addition, for project evaluation, efforts will be made to award contracts to small and/or disadvantaged firms. My judgment is based on the recommendations of the Project and Mission Review Committees.

Malcolm Butler

MALCOLM BUTLER

Director, USAID/Philippines

SEP 28 1988

Date

