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DEPARTMENT OF COOPERATIVES
FINAL REPORT
CONTRACT AID/ASIA-C-1357
AID LOAN NO. 497-T-052
DECEMBER 1984.

DIRECTORATE GENERAL OF COOPERATIVES

**AID LOAN NO. 497 - T - 052
RURAL ELECTRIFICATION PROJECT
CONTRACT
AID/ASIA - C - 1357**



CHAS. T. MAIN INTERNATIONAL, INC

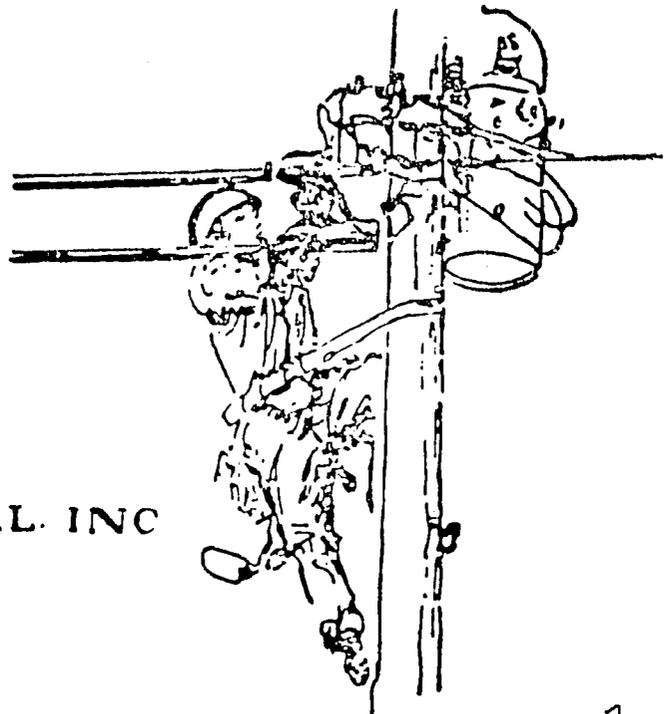


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SECTION I
INTRODUCTION

I. INTRODUCTION

This report presents a condensed history of the Rural Electrification Project in three outer islands of Indonesia, namely Sumatra (Lampung), Sulawesi (Luwu), and Lombok.

This project is an integral part of the ongoing plan for regional electric power development and distribution being carried out by the Republic of Indonesia (hereinafter referred to as the GOI) and the responsible national government agency, the Department of Cooperatives through the Project Development Office for Rural Electrification (hereinafter referred to as PDO/RE).

The project was funded by a Loan Agreement and a Grant Agreement between the Republic of Indonesia and the United States of America. These Agreements were implemented through the United States Agency for International Development (hereinafter referred to as USAID).

The Loan Agreement also provided funds for other electric power projects being accomplished under the responsibility of another agency of the GOI, Perusahaan Umum Listrik Negara (hereinafter referred to as PLN).

The Grant Agreement included funds for program consultancy services provided for these projects by Chas. T. Main International, Inc., (hereinafter referred to as MAIN) and the National Rural Electric Cooperative Association, (hereinafter referred to as NRECA).

This report discusses the relevant project activities of NRECA to the extent necessary to provide coherence but does not discuss the details of their contribution to the project beyond their operational interface with MAIN, or cover any aspects of the PLN projects other than those necessary to define the terms of the Loan and Grant Agreements, and subjects related directly thereto.

SECTION II
PROJECT HISTORY

II. PROJECT HISTORY

Discussion began between the GOI and USAID in November 1975 as to the interest in initiating a rural electrification program in Indonesia. This dialogue resulted in AID officially identifying results of the discussions as a Project and in the GOI formally requesting a pre-feasibility study.

The pre-feasibility study of a rural electrification program for Indonesia was conducted by an NRECA team during February and May 1976. This study team visited several provinces where discussions were held with local officials. The results of the team's studies when published, stimulated wide interest within the GOI.

During December 1976 PLN sponsored a seminar on Rural Electrification at Jakarta, at which papers were presented covering general and specific aspects of a rural electrification program for Indonesia. The conclusions reached through this seminar were : 1. That a national program of rural electrification should be started immediately to provide most villages in Indonesia with adequate electricity by the year 2000 and, 2. Concessionary financing would be required to accomplish this goal.

Starting in May and continuing through August of 1977, a USAID/NRECA team went to several outer islands where they assisted the then Directorate General of Cooperatives with the identification and subsequent preparation of feasibility studies for three project areas.

Assistance for the financing of certain goods and services for the Project was as follows :

1. On May 6, 1978 a Loan Agreement, No. 497-T-052, was executed between the Republic of Indonesia and the United States of America in the amount of U.S. Dollars thirty million (\$ 30,000,000.00). This sum to be apportioned as follows :

PLN	\$ 20,000,000.00.
Cooperatives	\$ 10,000,000.00.

and was to be utilized for procurement of material (other than poles), equipment, services and for assistance with the construction costs of the headquarters complexes.

2. Funds from the GOI to provide for construction of the distribution system, labor costs for housewiring, procurement of poles, acquisition costs of the headquarters complex sites and the construction costs of the headquarters complexes not covered by AID loan funds.

3. On March 30, 1978 a Grant Agreement was executed between the Government of Indonesia and The United States of America to provide for services of consultants. This Grant was in the total amount of U.S. Dollars six million (\$ 6,000,000.00) and was to be apportioned as follows :

PLN	\$ 2,375,000.00.
Cooperatives	\$ 3,625,000.00.

On September 18, 1978 Contract AID/ASIA-C-1357 was executed between USAID and MAIN to provide consultancy services to PLN and to PDO/RE with an estimated completion date of September 30, 1982. MAIN's scope of services included engineering and design of the distribution systems, assistance in material procurement, construction supervision and training.

On February 27, 1980 Contract AID/ASIA-C-1357 was amended to increase the scope of MAIN's services to include responsibility for site surveys, soils investigation and engineering, design and construction management of the headquarters complexes.

On November 8, 1982 the Contract with MAIN was amended to extend the period of the Contract until June 30, 1984.

On June 2, 1984 the Contract with MAIN was amended to extend the completion date to October 31, 1984.

On October 9, 1984 the Contract with MAIN was amended to extend the completion date to December 31, 1984.

On November 13, 1984 the building which housed the project office of the PDO/RE and MAIN was gutted by fire. The fire destroyed all central records and data. Therefore, much of more detailed information collected, edited and prepared for this report is unavailable and in all likelihood can never be reconstructed.

Further details on loan implementation, design, material procurement and construction of the project are contained in the following Sections of this Report.

SECTION III
LOAN IMPLEMENTATION

III. LOAN IMPLEMENTATION

1. Project Assistance Completion Date

Loan No. 497-T-052, signed on May 6, 1978 imposed a Project Assistance Completion Date, (PACD) of May 6, 1983. Implementation Letter No. 19, dated August 13, 1982, extended this date to December 31, 1984.

2. Conditions Precedent to Disbursement

The Borrower (GOI) was required to fulfill certain conditions before any Letter of Commitment could be issued or any disbursement of funds could be made, USAID could not approve any advertisement for bids on material until these conditions had been fulfilled. USAID acknowledged via their Implementation Letter No. 14, dated January 10, 1980, that the last of these conditions had been fulfilled.

3. Implementation Plan

The Loan required PDO/RE to submit an Implementation Plan which would include a time schedule, an organizational project plan, a training plan and a plan to promote the use of electricity in the project areas. This plan was submitted by PDO/RE and approved by USAID Implementation Letter No. 9, dated August 3, 1979.

4. Commitment of GOI funds

The Loan required the Borrower to provide for the project not less than the equivalent of US \$ 20,800,000 including costs borne on an "in-kind" basis. Of this total, the equivalent of US \$ 8,800,000 should come from the GOI budget for PDO/RE.

5. Letters of Implementation

To assist in the extension and fulfillment of project activities USAID issued 63 "Letters of Implementation". The majority of these were for administrative purposes, or to confirm mutual understandings on aspects of the project. These letters were also the procedure for "ear-marking" of Loan funds for the procurement of project material, equipment and services. After USAID's approval of proposed contracts, "Letters of Commitment" or "Direct Reimbursement Authorization" documents were issued which permitted actual disbursement of the Loan funds. These disbursements are shown in Section VI - PROCUREMENT and Section IX - FINANCIAL of this report.

SECTION IV
DESCRIPTION OF PROJECT

IV. DESCRIPTION OF PROJECT

CONCEPT

The GOI Rural Electrification Program is intended to provide electric power to rural residents at a cost that a large majority of them can afford to pay, assist the residents in wiring their homes and promote the use of electric power in a broad spectrum of social and economic activities.

The conceptual approach to achieving these goals stressed area coverage of the distribution systems and efficient, low cost system design. Separate technical assistance was provided to introduce the appropriate technology for productive uses programs in each service area. A housewiring loan plan was inaugurated to enable residential consumers to subscribe for service, and connection charges were reduced to make electric service affordable to the greatest number of consumers by financing installation costs on very soft loan terms.

The project consisted of three major components : distribution system, housewiring and metering, and headquarters complexes. These three areas of effort were each implemented at three project location and are geographically shown on page IV-4.

DISTRIBUTION

In the original feasibility study it was estimated that 1,650 kilometers of overhead primary and secondary distribution lines would be required to electrify 205 towns and villages.

Actual lines staking totalled 2, 171 kilometers of distribution lines which will serve 190 towns and villages. (See Section VIII).

HOUSEWIRING AND METERS

To facilitate prompt consumer usage of electric power, a housewiring program was initiated in all service areas to enable consumers to connect to the new distribution facilities while deferring the cost of wiring their homes over a six-month period if they so desired.

PDO/RE established a housewiring program in which consumers are offered a standard housewiring module consisting of either two or three incandescent lamp fixtures and one receptacle with associated wiring, switches, and a mini circuit breaker. Cooperative personnel installed housewiring for members at a rate based on the estimated financial capability of a family in each area.

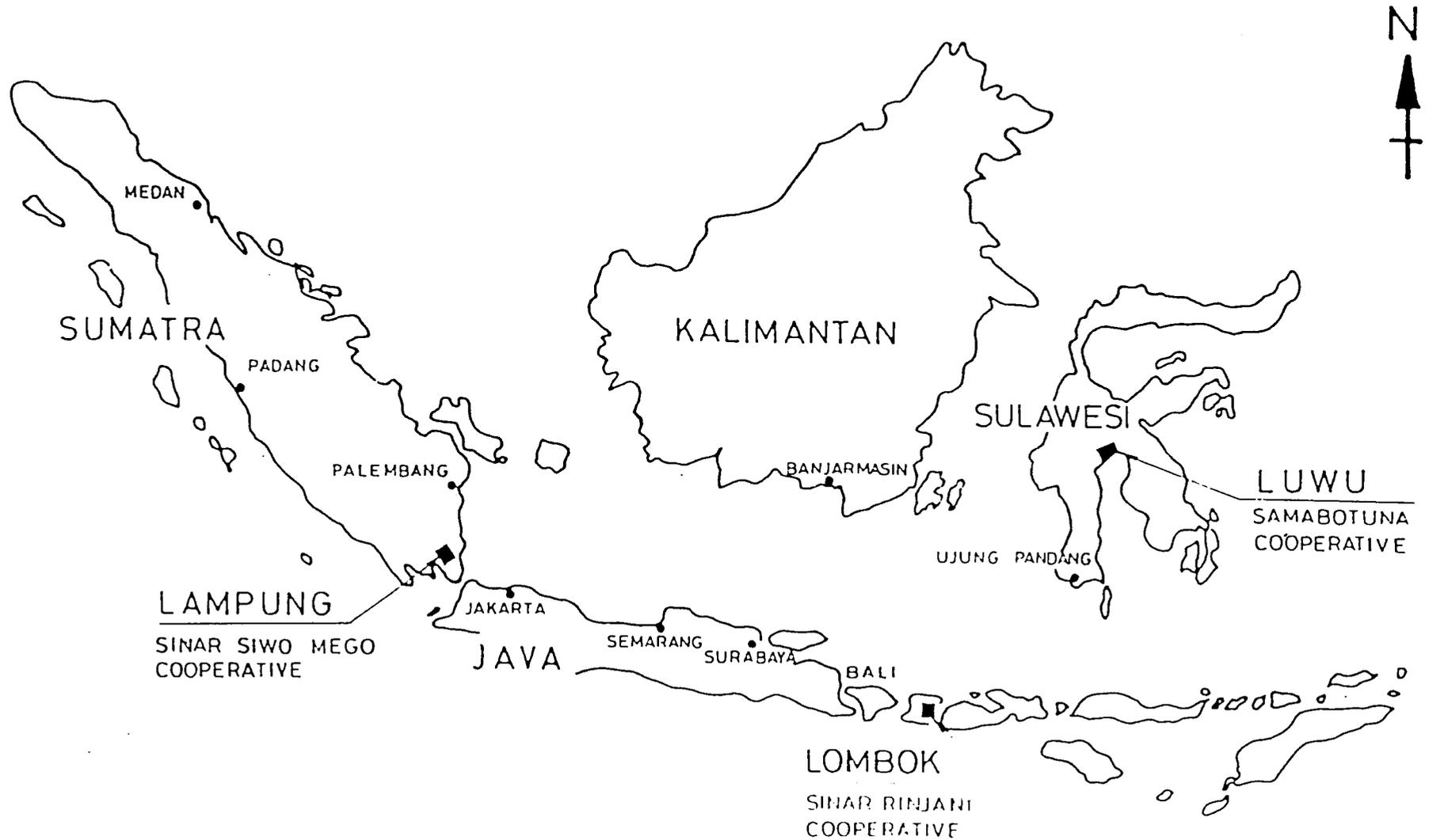
The sign-up fee is Rp. 1.000,- per member. A connection charge of Rp. 2.500,- in Lampung and Rp. 3.000,- in both Lombok and Luwu is charged by the Cooperatives.

The housewiring costs may be repaid by the member to the Cooperative over a six-month period at an interest rate of 6 percent. The monthly principal and interest payments are billed separately from the consumer's monthly kilowatt hour bill.

HEADQUARTERS COMPLEXES

A headquarters complex was planned for each of the three project areas to serve as an administrative center for commercial and logistic operations and as a base and supply point for the operations and maintenance crews assigned to the areas. Each headquarter complex consists of an administration building, warehouse and open areas for transformer, conductor and pole storage. The complex is surrounded by security fencing with guard house facilities at the gates. The buildings are identical for all sites, however, the orientation of the buildings and storage areas within each site varies due to different plot configuration.

LOCATIONS OF PROJECT SITES



SECTION V
DESIGN AND ENGINEERING

V. DESIGN AND ENGINEERING

DISTRIBUTION SYSTEM

MAIN's contracts with USAID dated September 18, 1979 stated that MAIN will be responsible for all phases of engineering of three areawide rural electric distribution system. The systems to be located individually on the islands of Sumatra, Sulawesi and Lombok with an isolated diesel drive electric power source furnished and installed by others. The engineering to be provided by MAIN for each of these systems to include design criteria, centerline and pole location survey, system sectionalizing and voltage drop studies, system key and detail maps, construction drawings, structure data sheets, system construction standards and specification for system material and equipment.

MAIN's staff assisted other project consultants with the preparation and finalization of the "Implementation Plan For The Establishment Of Three Rural Electric Cooperatives In Indonesia". The Implementation Plan was completed in March 1979 and in part specified that the design of the three distribution systems would be based on USA codes and standards of which the REA construction standard is typical. It also indicated that treated wood be utilized as system support structures.

Design criteria was finalized near the end of 1979 and agreed in all aspects with the directives contained in the Implementation Plan.

Each primary system to be an effectively (solidly) grounded, 50 Hz, three-phase, four wire system with a common, grounded, continuous neutral conductor. The primary voltage rating 20000/11550 volts nominal for three-phase circuits and 11550 volts nominal for single-phase circuits. Single phase secondary circuits incorporated in the distribution systems are to be single-phase, three-wire and two-wire circuits rated at 220/440 volts and 220 volts respectively. All transformers to be single-phase conventional type units compatible with nominal circuit voltage ratings. All ancillary apparatus such as lightning arresters, cutouts and oil circuit reclosers must be compatible with circuit voltage ratings.

On February 27, 1980 Contract AID/ASIA-C-1357 was amended to expand the consultants staff to facilitate completion of the required work and increase the consultants work load to include the training of six graduate Indonesian electrical engineers and four local draftsmen.

The Invitation of Bids (IFB) including Instructions to Bidders, General Conditions, Special Conditions, Bidders Proposal, Form of Agreement and Specifications for material and equipment to be procured were prepared in accordance with USAID regulations and the specific Loan Agreement for this program between the Governments of Indonesia and the United States of America.

Centerline staking of the three systems proceeded in the field during the preparation in the office of the Implementation Plan, Design Criteria and IFB's. The centerlines were staked originally from sites chosen by others as the proposed locations of the to be constructed electric power generation facilities.

The completion of centerline staking of the three systems by local cooperative personnel under the instruction and direction of MAIN's field staff, and the recruitment and arrival of distribution engineers approved in Contract Amendment Number 1 made it possible to detail and complete the sectionalizing and voltage drop studies of each of the three electrical distribution system.

Construction drawings and structure data sheet preparation commenced along with training of local draftsmen. It soon became apparent that production of the required number of construction drawings and structure data sheets was not possible within the time frame allotted for this work.

Therefore, in July 1981 the construction staking sheets was developed to take the place of the construction drawing and structure data sheet combining them into one manageable piece of paper.

The 2,150 staking sheets required to construct the distribution systems in the three areas were checked and approved by November 1, 1982. Area system detail and key maps were prepared area by area.

Lombok area maps were completed first, Sulawesi second, while the last maps prepared were for Sumatra and were completed in June 1984.

The installation in each project area of a pilot electric distribution system was approved in the early stages of project implementation. The generators to provide electricity for the projects were provided, after re-conditioning, from U.S. Government surplus inventory. MAIN's personnel became responsible to see that the various systems were designed, material and equipment procured, plans prepared for the generations facilities and system installation. The pilot project in the Lombok service area was started and completed first using only funds provided by PDO/RE. Construction of the Lampung area pilot project began in March 1981 and was

initially energized on July 13, 1981 serving 800 consumers. Construction in the Luwu service area on Sulawesi of the pilot project commenced in June 1981 and was energized two months later.

Early in 1983 it was determined that generation facilities for none of the three sites would be provided under the loan agreement between the Canadian and Indonesian Government. In order that the systems, when constructed, could be energized and operated for a reasonable length of time, AID consented to provide funds from the unspent portion of the project loan for generation equipment.

MAIN personnel provided generator and power transformer specifications for procurement of the necessary facilities. Provisions for additional generation has been made available to GOI through USA Public Law 480 funds.

The original and all copies of system studies, originals and nearly all copies of the staking sheets and detail and key maps of the three areas were reduced to ashes in the fire of November 13, 1984 described earlier in the Project History section of this report.

HEADQUARTERS COMPLEXES

Contract AID/ASIA-C-1357 was amended on February 27, 1980 increasing MAIN's scope of work and contract dollar amount. This amendment permitted increased staffing and employment of subcontractors. The subcontractors to provide site surveys, soil investigations and total design for the three separate headquarters complexes. MAIN's staff to guide, oversee, check and approve the work of the subcontractors. Each complex to be constructed to include all utility facilities such as telephone, water, electric wiring and equipment. Construction began at the first site on July 11, 1982.

The buildings at each complex were constructed on reinforced concrete foundations, after the necessary earth cut and fill, grading and compaction was completed. The floors are reinforced concrete slabs; for the administration buildings walls are of masonry construction with concrete columns and beams and the roofs are of wood framed construction covered with aluminum coated zinc (klip-lok)sheets. The ceilings are of teak plywood sheets. The design of the warehouse in each area is different from the design used for the administration buildings in that all frame work is of steel instead of wood and concrete.

Each administration building is a single story structure and is arranged in two areas. One area is allocated to commercial purposes and houses the commercial department, accounting department, productive uses department, office of the administration manager and support personnel. The second area is allocated to management and supervision together with areas for kitchen, piliklinic, toilets, and janitor service. This area houses the General Manager, public relations manager, conference room, radio room and secretarial pool.

A portion of the warehouse building at each site is occupied by high-bay heavy storage and vehicle maintenance areas, while the remaining area has two floor levels. This area is occupied by the technical and logistics managers and contains space for records, small parts storage, meter shop, service and operation personnel, toilets, line crew showers and dressing areas.

At each location an outdoor, uncovered, compacted area provides storage space for conductor, poles, transformers and equipment.

The construction and installation of all headquarters complexes was completed by May 1984.

SECTION VI
PROCUREMENT

VI. PROCUREMENT

USAID FUNDED

The basic General and Special Provisions of the Invitations for Bids (IFBs) were initially drafted in late 1979. These were submitted to USAID and PDO/RE for review, comments and approval.

The technical specifications sections were simultaneously developed for the following three basic material classifications :

- A. Distribution Line Material.
- B. Housewiring Material and Metering Equipment.
- C. Tools, Equipment and Vehicles.

The initial IFBs for each of these classifications (A, B, and C) were issued on the following dates :

I. Lampung

<u>IFB issuance</u>	<u>Bid opening date</u>
A. April 30, 1980	June 30, 1980
B. March 30, 1981	May 27, 1981
C. March 20, 1981	May 26, 1981

II. Lombok

	<u>IFB issuance</u>	<u>Bid opening date</u>
A.	September 6, 1980	October 27, 1980
B.	March 30, 1981	May 27, 1981
C.	March 20, 1981	May 26, 1981

III. Luwu

	<u>IFB issuance</u>	<u>Bid opening date</u>
A.	June 20, 1980	August 18, 1980
B.	March 30, 1981	May 27, 1981
C.	March 20, 1981	May 26, 1981

The first contracts awarded on these IFBs were consummated on the dates shown on the following page.

I. Lampung

<u>Contract date</u>	<u>Material category</u>
A. March 3, 1981	2,4,6,9,10,14 Line material and equipment.
B. December 12, 1981	1H, 5H Housewiring and metering equipment.
C. December 31, 1981	3T,4T,5T,6T,7T Tools and equipment.

II. Lombok

<u>Contract date</u>	<u>Material category</u>
A. December 11, 1981	10 Line material and equipment.
B. December 11, 1981	1H, 2H Housewiring and metering equipment.
C. January 31, 1982	2T Tools and equipment.

III. Luwu

<u>Contract date</u>	<u>Bid opening date</u>
A. April 2, 1981	2,5,6,7,11,12 Line material and equipment.
B. December 11, 1981	1H, 5H Housewiring and metering equipment.
C. December 31, 1981	1T,3T,4T,5T,6T,7T Tools and equipment.

Contracts were not awarded for all material categories, therefore, subsequent IFBs were issued in an endeavor to finalize contracts for all material and equipment categories. These IFBs also included additional quantities determined necessary to fulfill design requirements after the final layout and design of the three distribution systems had been completed.

The majority of these IFBs did result in contracts being awarded and implemented, the exception being contracts for vehicles. Bids received on vehicle IFBs were all declared either non-responsive or exhibited unreasonably high bid prices and were rejected on that basis.

In addition to the Project's material and equipment IFBs, material and equipment quotation requests were prepared and issued for Lampung and Luwu pilot projects and IFBs for the supply of Generation and Power Transformer Equipment financed through the USAID loan. The generation and power transformer equipment was originally to be financed under a Canadian Government (CIDA) Loan, but this loan was eventually cancelled by the GOI.

A summary of Contracts issued for the supply of material and equipment follows this narrative. It should be noted that the amounts expended under several of the Contracts were less than the L/C amounts authorized. This occurred only in cases where the quantity of material and equipment received satisfied construction requirements, thereby, permitting the value of short shipped and damaged items to be deducted from the suppliers final payment.

From the total value of shipping costs of imported material approximately 95% was shipped on U.S. flag carriers. This is excluding from calculations any shipments made on non-U.S. flag carriers which received waivers from AID Washington.

FUNDED BY GOI

The procurement of treated wood poles was the responsibility of PDO/RE and was to be financed by GOI funds. The procurement process was initially similar to that for material financed by the USAID loan.

IFBs were issued to procure treated wood poles for each of the three service areas in early 1980, but contracts were not finalized. An IFB for supply of treated wood poles for the Lombok service area was re-issued in early 1982 and a contract was consummated on November 13, 1982, but delivery was not completed by the end of 1984. An IFB was also re-issued for the Luwu service area in 1982 and in early 1983 a contract was signed, for the supply of treated wood poles. The contractor defaulted after he supplied one third of the contracted amount.

An IFB for treated wood pole was not re-issued for the Lampung service area. In 1982 PDO/RE purchased a wood treatment plant which finally became operational in early 1984. Contracts were signed for the supply of 10,000 raw wood poles during 1984, but as of December 15, 1984 only 350 acceptable poles had been received at the treatment plant.

Lampung Procurement Contract Information

(SAID LOAN FUND)

Line Material and Equipment

Category and Description	Contractor	Contract No.	Date Signed	Date Completed	Contract Price	Notes
1. Line Hardware	Hayden International Corporation	10/KLP/LA/81	28 Dec. 81	21 Jan. 84	\$ 492,152.00	
	Allis Electric Company	16/KLP/LA/82	20 Sep. 82	31 Oct. 83	\$ 75,346.50	
	Hari Subur and Sons	22/KLP/LA/83	11 Oct. 83	-	\$ 80,017.00	1)
2. Steel Strand	New World Research	02/KLP/LA/81	11 Mar. 81	31 Mar. 82	\$ 93,287.50	
3. Bare Conductor	Midland Metals Overseas Ltd.	15/KLP/LA/82	20 Sep. 82	16 June 83	\$ 630,855.60	
	Midland Metals Overseas Ltd.	05/KLP/LA/83	3 Aug. 83	20 June 84	\$ 269,095.00	
4. Insulated Conductor	New World Research	02/KLP/LA/81	11 Mar. 81	11 Aug. 82	\$ 321,049.25	
5. Special Bare Conductor	Graybar Electric Company	04/KLP/LA/81	2 Apr. 81	30 Apr. 83	\$ 12,874.60	
	Avco Overseas Corporation	11/KLP/LA/82	10 Nov. 82	14 Feb. 84	\$ 32,460.00	
6. Special Insulated Conductor	Kabelindo Murni Co.	07/KLP/LA/81	11 Mar. 81	3 Feb. 82	\$ 2,159.60	3)
7. Conductor Accessories	P.L.P. Co. Brazil	06/KLP/LA/81	31 Dec. 81	7 Jan. 83	\$ 37,825.25	
	P.L.P. Co. U.S.A.	06/KLP/LA/83	3 Aug. 83	4 Nov. 84	\$ 20,082.00	
8. Connectors	Irby Construction Company	09/KLP/LA/81	23 Dec. 81	24 Jan. 83	\$ 56,850.45	
	Avco Overseas Corporation	11/KLP/LA/82	10 Nov. 82	14 Feb. 84	\$ 15,381.05	
	New World Research	17/KLP/LA/83	3 Aug. 83	-	\$ 15,290.00	2)
9. Insulators	Futura Trading Company	03/KLP/LA/81	11 Mar. 81	20 Oct. 82	\$ 145,320.86	
10. Protective Devices	New World Research	02/KLP/LA/81	11 Mar. 81	10 May 82	\$ 111,702.00	
	New World Research	17/KLP/LA/83	3 Aug. 83	-	\$ 8,522.00	2)
11. Transformers	Meta Epsi Engineering Co.	06/KLP/LA/81	11 Mar. 81	-	\$ 543,510.45	1)
	Shen Chang Ltd.	18/KLP/LA/83	15 Aug. 83	-	\$ 291,744.00	2)
12. Reclosers	McGraw-Edison Co.	03/KLP/LA/81	31 Dec. 81	17 June 83	\$ 45,311.10	
13. Street Lighting Equipment	Irby Construction Company	09/KLP/LA/81	23 Dec. 81	24 Jan. 83	\$ 21,012.95	
14. Treated Wood Products	New World Research	02/KLP/LA/81	11 Mar. 81	10 May 82	\$ 89,025.00	
	Elektrika	12/KLP/LA/82	10 Nov. 82	31 Aug. 83	\$ 807.64	3)
15. Test and Maintenance Equipment	Irby Construction Company	09/KLP/LA/81	23 Dec. 81	24 Jan. 83	\$ 22,288.15	
Power Transformers	Oaewoo Corporation	497-0267-C-00-4038-00	30 Mar. 84	-	\$ 6,875.00	10)
Generators Spare Parts	Engine Power Co.	497-0267-S-00-4033-00	4 Apr. 81	10 Aug. 84	\$ 31,205.81	
Generators	P.T. Sande Jaya.	497-0267-C-00-4032-00	15 Dec. 83	20 July 84	\$ 72,912.84	4)

Lampung Procurement Contract Information
 (USAID LOAN FUND)
 Housewiring Material and Metering Equipment

Category and Description	Contractor	Contract No.	Date Signed	Date Completed	Contract Price	Notes
1. Residential & Commercial Meters	General Electric Company	01H/KLP/LA/81	11 Dec. 81	30 Aug. 83	\$ 590,440.10	
2. Cables	Leader Cable Industries	13/KLP/LA/82	10 Nov. 82	29 Feb. 84	\$ 14,263.70	
	Pacific Electric Wire	19/KLP/LA/83	13 Sep. 83	15 Dec. 84	\$ 35,126.03	
3. Wiring Devices - 1	C.V. Prima Usada	14/KLP/LA/82	20 Sep. 82	5 Jan. 83	\$ 3,092.55	3)
	Elprima Agung Teknik	20/KLP/LA/83	15 Aug. 83	8 Dec. 83	\$ 6,001.43	3)
4. Wiring Devices - 2	C.V. Prima Usada	14/KLP/LA/82	20 Sep. 82	5 Jan. 83	\$ 1,453.15	3)
	Elprima Agung Teknik	20/KLP/LA/83	15 Aug. 83	8 Dec. 83	\$ 2,655.54	3)
5. Protective Devices	General Electric Company	01H/KLP/LA/81	11 Dec. 81	14 Sep. 83	\$ 25,440.00	
	General Electric Company	21/KLP/LA/83	3 Aug. 83	-	\$ 35,300.00	1)
6. Lamps	Westinghouse Corporation	02H/KLP/LA/81	31 Jan. 82	21 Jan. 84	\$ 15,750.00	
7. Miscellaneous Materials - 1	Westinghouse Corporation	02H/KLP/LA/81	31 Jan. 82	21 Jan. 84	\$ 65,657.70	
	Hari Subur and Sons	22/KLP/LA/83	11 Oct. 83	-	\$ 3,780.00	1)
8. Miscellaneous Materials - 2	C.V. Prima Usada	14/KLP/LA/82	20 Sep. 82	5 Jan. 83	\$ 4,543.78	3)
9. Miscellaneous Materials - 3	Westinghouse Corporation	02H/KLP/LA/81	31 Jan. 82	21 Jan. 84	\$ 21,411.56	
	New World Research	17/KLP/LA/83	3 Aug. 83	-	\$ 22,470.00	2)
10. Grounding Equipment	Westinghouse Corporation	02H/KLP/LA/81	31 Jan. 82	21 Jan. 84	\$ 25,772.00	
	Berca Indonesia P.T.	01/KLP/LA/83	15 Aug. 83	-	\$ 18,200.00	4)

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Lampung Improvement Contract Information

(MIP LOAN FUND)

Tools and Equipment

Category and Description	Contractor	Contract No.	Date Signed	Date Completed	Contract Price	Notes
1. Personnel Equipment	Westinghouse Corporation	02T/KLP/LA/81	31 Jan. 82	-	\$ 5,479.76	2)
2. Hand Tools	Westinghouse Corporation	02T/KLP/LA/81	31 Jan. 82	-	\$ 3,654.56	2)
3. Construction Tools and Equipment	Gloria Trading Company	01T/KLP/LA/81	31 Dec. 81	15 Jan. 83	\$ 16,822.44	
4. Compression Tools	Gloria Trading Company	01T/KLP/LA/81	31 Dec. 81	15 Jan. 83	\$ 8,622.38	
5. Shop Tools	Gloria Trading Company	01T/KLP/LA/81	31 Dec. 81	-	\$ 12,660.50	5)
	New World Research	17/KLP/LA/83	3 Aug. 83	-	\$ 3,769.00	2)
6. Test Equipment	Gloria Trading Company	01T/KLP/LA/81	31 Dec. 81	15 Jan. 83	\$ 9,045.73	
7. Grounding Equipment	Gloria Trading Company	01T/KLP/LA/81	31 Dec. 81	-	\$ 2,580.75	5)

Lombok Procurement Contract Information

(SARIP LOAN FUND)

Line Material and Equipment

Category and Description	Contractor	Contract No.	Date Signed	Date Completed	Contract Price	Notes
1. Line Hardware	Joslyn Corporation	10/KLP/LO/81	28 Dec. 81	31 Aug. 83	\$ 140,618.20	
	Allis Electric Corporation	15/KLP/LO/82	20 Sep. 82	17 Jan. 84	\$ 24,804.00	
2. Steel Strand	Avco Overseas Corporation	12/KLP/LO/82	10 Nov. 82	20 June 84	\$ 11,878.69	
3. Bare Conductor	Leader Cable Co.	13/KLP/LO/82	10 Nov. 82	24 Oct. 83	\$ 170,809.57	
	Kabelindo Murni	008/UP3LP/SPK/X11/84	13 Dec. 84	28 Dec. 84	\$ 24,471.70	3)
4. Insulated Conductor	New World Research	05/KLP/LO/81	30 July 81	4 Nov. 82	\$ 194,800.00	
5. Special Bare Conductor	Avco Overseas Corporation	12/KLP/LO/82	10 Nov. 82	20 June 84	\$ 11,349.58	
6. Special Insulated Conductor	Leader Cable Co.	13/KLP/LO/82	10 Nov. 82	24 Oct. 83	\$ 906.90	
7. Conductor Accessories	Irby Construction Company	08/KLP/LO/81	31 Dec. 81	13 June 83	\$ 41,350.50	
8. Connectors	Irby Construction Company	09/KLP/LO/81	23 Dec. 81	30 Aug. 83	\$ 44,659.29	
	Avco Overseas Corporation	12/KLP/LO/82	10 Nov. 82	20 June 84	\$ 7,873.25	
	New World Research	02/KLP/LO/83	15 Aug. 83	-	\$ 5,007.50	6)
9. Insulators	Daewoo Corporation	11/KLP/LO/82	20 Sep. 82	12 Mar. 84	\$ 37,717.56	
10. Protective Devices	McGraw-Edison Corporation	07/KLP/LO/81	11 Dec. 81	30 Apr. 84	\$ 55,420.90	
	New World Research	02/KLP/LO/83	15 Aug. 83	-	\$ 3,819.50	6)
11. Transformers	Shen Chang Ltd.	04/KLP/LO/83	15 Aug. 83	-	\$ 72,439.00	2)
12. Reclosers	McGraw-Edison Corporation	03/KLP/LO/81	20 Apr. 82	30 Apr. 83	\$ 44,911.06	
13. Street Lighting Equipment	Irby Construction Company	09/KLP/LO/81	23 Dec. 81	30 Aug. 83	\$ 11,185.35	
14. Treated Wood Products	Elektrika	14/KLP/LO/82	10 Nov. 82	28 Sep. 83	\$ 21,182.09	3)
15. Tools and Maintenance Equipment	Irby Construction Company	09/KLP/LO/81	23 Dec. 81	30 Aug. 83	\$ 21,190.06	
Generator Spare Parts	Engine Power Corporation	497-0267-S-00-4033-00	4 Apr. 84	10 Aug. 84	\$ 13,959.63	
Generators	P.T. Sande Jaya	497-0267-C-00-4032-00	15 Dec. 83	15 July 84	\$ 74,097.84	
	Alltrack "78	01/KLP/LO/LW/84	31 July 84	-	\$ 188,595.51	10)
Power Transformers	Trafindo Perkasa	02/KLP/LO/LW/84	15 Dec. 84	28 Dec. 84	\$ 27,985.69	3)

Lombok Procurement Contract Information

(USAID LOAN FUND)

Housewiring Material and Metering Equipment

Category and Description	Contractor	Contract No.	Date Signed	Date Completed	Contract Price	Notes
1. Residential and Commercial Meters	General Electric Company	01H/KLP/L0/81	11 Dec. 81	-	\$ 358,342.25	2)
2. Cable	Leader Cable Industry	13/KLP/L0/82	10 Nov. 82	25 Oct. 83	\$ 14,263.70	
	New World Research	02/KLP/L0/83	15 Aug. 83	-	\$ 50,528.40	6)
3. Wiring Devices - 1	Elprima Agung Tehnik	16/KLP/L0/82	20 Sep. 82	1 Nov. 83	\$ 3,986.06	3)
	Elprima Agung Tehnik	06/KLP/L0/83	15 Aug. 83	6 Dec. 83	\$ 6,453.17	3)
4. Wiring Devices - 2	Elprima Agung Tehnik	16/KLP/L0/82	20 Sep. 82	1 Nov. 83	\$ 1,907.68	3)
	Elprima Agung Tehnik	06/KLP/L0/83	15 Aug. 83	6 Dec. 83	\$ 2,759.22	3)
5. Protective Divecex	General Electric Company	01H/KLP/L0/81	11 Dec. 81	14 Oct. 83	\$ 25,440.00	
	General Electric Company	18/KLP/L0/83	3 Aug. 83	-	\$ 7,060.00	1)
6. Lamps	Fanatri Utama	03H/KLP/L0/81	23 Dec. 81	27 May 82	\$ 12,048.39	3)
7. Miscellaneous Materials - 1	Westinghouse Corporation	02H/KLP/L0/81	31 Jan. 82	29 Feb. 84	\$ 75,546.45	
	Hari Subur and Sons	19/KLP/L0/83	11 Oct. 83	-	\$ 756.00	1)
8. Miscellaneous Materials - 2	Elprima Agung Tehnik	16/KLP/L0/82	20 Sep. 82	1 Nov. 83	\$ 5,643.22	3)
9. Miscellaneous Materials - 3	Westinghouse Corporation	02H/KLP/L0/81	31 Jan. 82	29 Feb. 84	\$ 21,934.76	
	New World Research	02/KLP/L0/83	15 Aug. 83	-	\$ 4,620.00	6)
10. Grounding Equipment	Westinghouse Corporation	02H/KLP/L0/81	31 Jan. 82	29 Feb. 84	\$ 26,435.00	
	Hari Subur and Sons	19/KLP/L0/83	11 Oct. 83	-	\$ 4,080.00	1)

Lombok Procurement Contract Information

(USAID LOAN FUND)

Tools and Equipment

Category and Description	Contractor	Contract No.	Date Signed	Date Completed	Contract Price	Notes
1. Personnel Equipment	Gloria Trading Company	01T/KLP/L0/81	12 Apr. 82	20 Oct. 84	\$ 3,473.38	
2. Hand Tools	Westinghouse Corporation	02T/KLP/L0/81	31 Jan. 82	-	\$ 2,631.92	7)
3. Construction Tools and Equipment	Gloria Trading Company	01T/KLP/L0/81	12 Apr. 82	20 Jan. 83	\$ 10,299.16	
4. Compression Tools	Gloria Trading Company	01T/KLP/L0/81	12 Apr. 82	20 Jan. 83	\$ 6,219.38	
5. Shop Tools	Gloria Trading Company	01T/KLP/L0/81	12 Apr. 82	-	\$ 12,297.50	5)
	New World Research	02/KLP/L0/83	15 Aug. 83	-	\$ 3,757.00	6)
6. Test Equipment	Gloria Trading Company	01T/KLP/L0/81	12 Apr. 82	20 Oct. 84	\$ 9,031.61	
7. Gounding Equipment	Gloria Trading Company	01T/KLP/L0/81	12 Apr. 82	-	\$ 1,691.25	5)

Luwu Procurement Contract Information

(USAID LOAN FUND)

Line Material and Equipment

Category and Description	Contractor	Contract No.	Date Signed	Date Completed	Contract Price	Notes
1. Line Hardware	Hijason Industrial Ltd.	01/KLP/LW/81	15 Dec. 81	31 Oct. 83	\$ 324,659.45	
	Allis Electric Company	16/KLP/LW/82	20 Aug. 82	19 Nov. 83	\$ 37,989.00	
	Hari Subur and Sons	25/KLP/LW/83	11 Oct. 83	-	\$ 8,845.00	1)
2. Steel Strand	Copperweld Industry	02/KLP/LW/81	5 Nov. 81	16 May 82	\$ 44,032.20	
3. Bare Conductor	Midland Metals Overseas Ltd.	15/KLP/LW/82	20 Sep. 82	11 Aug. 83	\$ 491,290.80	
	Midland Metals Overseas Ltd.	22/KLP/LW/83	3 Aug. 83	11 July 84	\$ 82,908.00	
4. Insulated Conductor	Walsin Lihwa	04/KLP/LW/81	8 Apr. 82	17 June 83	\$ 112,574.00	
5. Special Bare Conductor	Copperweld Industry	02/KLP/LW/81	5 Nov. 81	24 Jan. 83	\$ 18,298.00	
6. Special Insulated Conductor	Kabelindo Murni	05/KLP/LW/81	2 Apr. 81	17 Feb. 82	\$ 864.37	3)
7. Conductor Accessories	P.L.P. Co. Brazil	06/KLP/LW/81	5 Nov. 81	24 Jan. 83	\$ 38,207.00	
	New World Research	23/KLP/LW/83	15 Aug. 83	-	\$ 3,700.00	8)
8. Connectors	Irby Construction Company	07/KLP/LW/81	15 Dec. 81	21 Apr. 83	\$ 35,467.25	
	Avco Overseas Corporation	14/KLP/LW/82	10 Nov. 82	12 July 84	\$ 8,942.80	
	New World Research	23/KLP/LW/83	15 Aug. 83	-	\$ 9,715.00	8)
9. Insulators	New World Research	13/KLP/LW/81	3 Dec. 81	7 Jan. 83	\$ 88,588.40	
	Hari Subur and Sons	25/KLP/LW/83	11 Oct. 83	-	\$ 12,975.00	1)
10. Protective Devices	New World Research	09/KLP/LW/81	15 Dec. 81	15 June 82	\$ 51,177.00	
	New World Research	23/KLP/LW/83	15 Aug. 83	-	\$ 7,596.50	8)
11. Transformers	Daewoo Corporation	10/KLP/LW/81	31 Dec. 81	2-Nov. 82	\$ 203,504.00	
	Shen Chang Ltd.	08/KLP/LW/83	15 Aug. 83	-	\$ 34,336.00	2) 2)
12. Reclosers	McGraw-Edison Co.	11/KLP/LW/81	17 Sep. 81	16 June 82	\$ 40,884.96	
13. Street Lighting Equipment	Irby Construction Company	07/KLP/LW/81	31 Dec. 81	21 Apr. 82	\$ 11,185.35	
14. Wood Products	New World Research	09/KLP/LW/81	15 Dec. 81	17 Mar. 83	\$ 31,040.00	
	Elektrika	18/KLP/LW/82	10 Nov. 82	13 Feb. 84	\$ 2,422.91	3)
15. Test and Maintenance Equipment	New World Research	13/KLP/LW/81	31 Dec. 81	24 Oct. 83	\$ 14,060.00	
Generators	P.T. Sande Jaya	497-0267-C-00-4032-00	15 Dec. 83	20 July 84	\$ 73,687.84	
	P.T. Alltrack '78	01/KLP/LW/84	31 July 84	-	\$ 111,127.62	10)
Power Transformers	Daewoo Corporation	497-0267-C-00-4038-00	30 Mar. 84	-	\$ 6,875.00	10)
	Trafindo Perkasa	02/KLP/LW/84	15 Dec. 84	28 Dec. 84	\$ 16,665.88	3)
Generator Spare Parts	Engine Power Corporation	497-0267-S-00-4033-00	4 Apr. 84	10 Aug. 84	\$ 18,018.48	

Luwu Procurement Contract Information

(USAID LOAN FUND)

Housewiring and Metering Equipment

Category and Description	Contractor	Contract No.	Date Signed	Date Completed	Contract Price	Notes
1. Residential and Commercial Meters	General Electric Company	01H/KLP/LW/81	11 Dec. 81	21 Mar. 84	\$ 370,707.25	
2. Cable	Leader Cable Industry	19/KLP/LW/82	10 Nov. 82	17 Jan. 84	\$ 14,263.70	
	Universal Cable	12/KLP/LW/83	15 Aug. 83	11 Jul. 84	\$ 44,899.00	
3. Wiring Devices - 1	Elprima Agung Teknik	17/KLP/LW/82	20 Sep. 82	6 May 83	\$ 3,986.06	3)
	Elprima Agung Teknik	26/KLP/LW/83	15 Aug. 83	13 Feb. 84	\$ 6,269.42	3)
4. Wiring Devices - 2	Elprima Agung Teknik	17/KLP/LW/82	20 Sep. 82	6 May 83	\$ 1,907.68	3)
	Elprima Agung Teknik	26/KLP/LW/83	15 Aug. 83	13 Feb. 84	\$ 2,759.22	3)
5. Protective Devices	General Electric Company	01H/KLP/LW/81	11 Dec. 81	15 Sep. 84	\$ 25,440.00	
	General Electric Company	27/KLP/LW/83	3 Aug. 83	-	\$ 21,180.00	1)
6. Lamps	Fanatri Utama	03H/KLP/LW/81	23 Dec. 81	2 Nov. 82	\$ 12,198.77	3)
7. Miscellaneous Material - 1	Westinghouse Corporation	02H/KLP/LW/81	31 Jan. 82	-	\$ 75,546.45	9)
	Hari Subur and Sons	25/KLP/LW/83	11 Oct. 83	-	\$ 2,268.00	1)
8. Miscellaneous Material - 2	Elprima Agung Teknik	17/KLP/LW/82	29 Sep. 82	6 May 83	\$ 5,643.22	3)
	Westinghouse Corporation	28/KLP/LW/83	3 Aug. 83	-	\$ 6,084.50	8)
9. Miscellaneous Material - 3	Westinghouse Corporation	02H/KLP/LW/81	31 Jan. 82	-	\$ 21,934.76	9)
	New World Research	23/KLP/LW/83	3 Aug. 83	-	\$ 13,440.00	8)
10. Grounding Equipment	Westinghouse Corporation	02H/KLP/LW/81	31 Jan. 82	-	\$ 26,435.00	9)
	Hari Subur and Sons	25/KLP/LW/83	11 Oct. 83	-	\$ 12,240.00	1)

Luwu Procurement Contract Information

(USAID LOAN FUND)

Tools and Equipment

Category and Description	Contractor	Contract No.	Date Signed	Date Completed	Contract Price	Notes
1. Personnel Equipment	Gloria Trading Company	01T/KLP/LW/81	31 Dec. 81	18 Jun. 83	\$ 3,473.38	
2. Hand Tools	Westinghouse Corporation	02T/KLP/LW/81	31 Jan. 82	-	\$ 2,631.92	9)
3. Construction Tools and Equipment	Gloria Trading Company	01T/KLP/LW/81	31 Dec. 81	18 Jun. 83	\$ 10,299.16	
4. Compression Tools	Gloria Trading Company	01T/KLP/LW/81	31 Dec. 81	18 Jun. 83	\$ 6,219.38	
5. Shop Tools	Gloria Trading Company	01T/KLP/LW/81	31 Dec. 81	-	\$ 12,297.50	5)
	New World Research	23/KLP/LW/83	3 Aug. 83	-	\$ 3,769.00	8)
6. Test Equipment	Gloria Trading Company	01T/KLP/LW/81	31 Dec. 81	20 Oct. 84	\$ 9,031.61	
7. Grounding Equipment	Gloria Trading Company	01T/KLP/LW/81	31 Dec. 81	-	\$ 1,691.25	5)

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Notes to tables.

- 1) Defaulted through non-delivery within terms of contract.
- 2) Replacements requested but not yet received.
- 3) U.S. Dollar figures for Rupiah contracts are based on exchange rates at time of opening DRA.
- 4) Material in country, not yet tested and accepted but under guarantee.
- 5) Shipment lost in transit but no attempt made by contractor for re-shipment.
- 6) Material awaiting transshipment in Surabaya.
- 7) Second shipment not yet cleared customs as documentation incorrect.
- 8) Material in Ujung Pandang, awaiting forwarding to Luwu.
- 9) Deduction for shortages not yet agreed upon by both parties.
- 10) Not yet cleared customs.

SECTION VII
TRAINING

VII. TRAINING

By amendment no. 1 to MAIN's contract it became the Engineer's responsibility for on-the-job training of six electrical engineers and four draftsmen. The engineers' training was to consist of distribution engineering and design, drafting of IFBs and procedures for international tendering. The draftsmen's training was to consist of preparation of mapping and structure data sheets as well as familiarity with distribution material and equipment, pole span lengths, poles and classes thereof and service entrance material.

The training of engineers was not possible as personnel were not made available by PDO/RE. Contract amendment no. 6, dated November 8, 1982 deleted engineers' training from MAIN's scope of services.

Formal classroom training was undertaken by PDO/RE and NRECA with MAIN assisting in areas where MAIN's personnel were deemed to be better qualified. This was mainly in the following areas

1. Linemen and groundmen training.
2. Civil construction inspection.
3. Distribution line construction inspection.
4. Preparation of staking sheets.
5. Preparation of "as-builts".

SECTION VIII
CONSTRUCTION

VIII. CONSTRUCTION

HEADQUARTERS COMPLEXES

The loan agreement between USAID and GOI sanctioned a partial reimbursement of construction costs for three headquarters complexes to a maximum amount of \$ 558, 600. This represented approximately 32% of the total construction costs at the exchange rate applicable when the construction contracts were signed. Due to the revaluation of the Indonesian Rupiah against the U.S. Dollar, this increased USAID's participation to approximately 49% of the total construction costs for all three complexes.

Contracts were awarded as follows :

1. Lampung - C.V. Perkasa, Rp. 318.166.000,- amended to become Rp. 343.198.630,-. This contract was signed on 30 June 1982. Due to financial difficulties the contractor was unable to complete the work. The work eventually was finished by a second contractor in March 1984.
2. Lombok - P.T. Pembangunan Perumahan, Rp. 380.565.000,- signed on 16 September 1982. Construction was completed and accepted in October 1983.

3. Luwu - C.V. Central, Rp. 379.090.000,- signed on 27 July 1982. Contract was amended to become Rp. 409.053.000,-. Due to a cash flow problem experienced by the Contractor the contract was terminated in early 1984 and the work completed by a third party prior to the end of May 1984.

The headquarters complex in each area consists of an administration building, a warehouse, open storage areas, access roads, parking lots and security fencing.

The administration building consists of two separate areas connected by a covered walkway. One area contains the accounting and commercial departments and the administration manager. The second area houses the General Manager, public relations section, secretarial pool, conference room and radio room plus toilets, kitchen, first aid room and janitor service area.

The warehouse building consists of a high-bay vehicle maintenance area and related store-room and office, a high-bay heavy storage area with loading bay plus a two-story office area. The office area houses the warehouse staff, technical staff, classroom for training, meter testing area, linemen's locker room plus toilets, showers and a kitchen.

Both buildings include utilities and an interconnected telephone system.

The open storage area includes space for pole storage and a concrete pad for conductor and transformer storage. The warehouse and open storage areas are surrounded by security fences, with a guard-house at the entrance gate.

DISTRIBUTION SYSTEMS

Construction began in all three areas with pilot projects, initiated in order to familiarize the populace with the potential benefits of electrification and to gain their confidence in "Rural Electric Cooperatives".

Construction of the Lombok pilot project was implemented by a PDO/RE task force with the aid of local Cooperative employees and was performed from February through October 1980. This served approximately 2,000 customers.

The Lampung pilot project construction commenced in March 1981 and was energized in July of the same year. This initially served 800 customers.

In Luwu a secondary only pilot project was constructed during July through September 1981 and served 380 customers.

Power for these pilot projects was provided by re-conditioned excess property 100 KW generators financed with USAID funds.

In chronological order the construction of the main projects proceeded as follows :

1. Lombok.

A contract for construction of the main distribution system was signed with P.T. Teknik Umum in June 1983. The contractor commenced work in early July 1983 with a slated construction period of 180 days. Delays were caused by the late delivery of treated wood poles and also by a delay of four months in the transshipment of insulators through Surabaya.

In July 1984 Teknik Umum was instructed to utilize all available material for the construction of as much of the system as possible by September 30, 1984. By that time he had completed 98% of the work based upon the contract price. The intention is that either Teknik Umum will complete the construction when the balance of the material is received or it will be completed by Cooperative personnel.

2. Luwu.

Bids for distribution construction in the Luwu service area were initially received and opened in July 1983. This bidding was declared null and void as only two pre-qualified bidders submitted acceptable bids.

The work was then re-tendered in January 1984 to enable all pre-qualified contractors, country-wide, to submit bids. These bids were received and opened in February 1984. The successful bidder was C.V. Biro Teknik Sulawesi, who signed a contract in July 1984.

Construction was started in August 1984 at a very slow pace. Twenty five percent of the work was completed by the end of December 1984.

One third of the required 9,000 treated wood poles are on site and it is expected that more poles will be received prior to the end of March 1985. The backbone of the distribution system and several taps within the capital towns of the six subdistricts in the area can be completed with the poles at site. As only a few 9 meter poles were included in the first pole shipment very little of the secondary lines were constructed in 1984.

3. Lampung.

IFBs were issued, after several delays to pre-qualified line construction contractors in September 1984. The evaluation of the received bids was delayed due to the fire in PDO/RE office. Evaluations were eventually completed by 15 December 1984 and two contracts, one for the North and East feeders and one for the South and West feeders, may be signed by the end of December 1984.

Construction will not commence prior to February 1985 due to a lack of treated wood poles.

SECTION IX
FINANCIAL

IX. FINANCIAL

The sources of foreign exchange for this Project were a Loan and a Grant from the United States of America. The Loan was to be used for procurement of material and equipment; and the Grant was to be used for payment of Consultant Services.

The USAID Loan in the total amount of U.S. \$ 30,000,000 was to be divided as follows :

PLN	\$ 20,000,000.
PDO/RE	\$ 10,000,000.

The Grant was originally in the amount of US \$ 6,000,000 but later was increased to U.S. \$ 11,000,000.

The amended total was to be apportioned for Consultant support as follows :

PLN	\$ 4,435,000.
PDO/RE	\$ 6,565,000.

The Consultant support allocated to PDO/RE was further apportioned as follows :

For OMT Team (NRECA)	\$ 2,245,000.
For A & E Team (MAIN)	\$ 3,545,000.
Other	\$ 775,000.

The analysis of foreign exchange costs, for the purpose of this report, will be limited to the PDO/RE Projects and the A & E Team (MAIN).

1. SUMMARY FOREIGN EXCHANGE COSTS :

A. CONSULTANT SERVICES : (US, AID GRANT)

The USAID contract with MAIN for Consultant Services, with estimated breakdown between GOI agencies, was as follows :

	<u>PLN</u> <u>PROJECT</u>	<u>PDO/RE</u> <u>PROJECT</u>	<u>TOTAL</u>
Original Contract dated			
September 18, 1978	\$ 1,638,114	\$ 1,776,263	\$ 3,414,37
Amended dated			
February 27, 1980	589,790	1,351,094	1,940,884

	<u>PLN PROJECT</u>	<u>PDO/RE PROJECT</u>	<u>TOTAL</u>
Amended dated			
November 8, 1982	\$ 148,400	\$ 203,053	\$ 351,453
Amended dated			
October 3, 1983	72,760	78,896	151,656
Amended dated			
June 2, 1984	50,000	- 0 -	50,000
Amended dated			
October 9, 1984	32,602	92,390	124,992
	-----	-----	-----
	\$ 2,531,666	\$ 3,501,696	\$ 6,033,362
	=====	=====	=====

This disbursement of these Grant funds, as of 25 October 1984, was as follows :

<u>PLN PROJECT</u>	<u>PDO/RE PROJECT</u>	<u>TOTAL</u>
\$ 2,501,706	\$ 3,449,659	\$ 5,951,365

It is anticipated that funds are sufficient for MAIN services through December 31, 1984,

B. EQUIPMENT & MATERIAL

The USAID Loan allocation, in the amount of \$ 10,000,000 was utilized as shown in Item 3 of this Section.

2. INDONESIAN RUPIAH COSTS

The USAID Loan required that the GOI provide local currency support for the Project. The Loan stipulated that the estimated amount required for construction activities was U.S. \$ 8,800,000 equivalent.

The USAID Grant stipulated that the GOI provide funds for Consultant support in an amount of not less than the equivalent of US \$ 1,900,000, which sum would include costs borne on an "in kind" basis, such as living quarters, office space, vehicles, supplies and other logistics costs. The estimated amount required for Consultant support was apportioned as follows :

PLN	\$ 585,000.
PDO/RE	\$ 1,315,000.

3. SUMMARY OF PROJECTS COSTS

The actual costs of the PDO/RE Project is as itemized below, assuming that the funds reserved for uncompleted contracts (Section VI, this report) are expended :

	<u>DOLLARS</u>
A & E Team (MAIN) Support	(1)
OMT Team (NRECA) Support	(1)
Training	43,000.00
Vehicles and Plant	773,849.05
Headquarters Complexes	558,600.00
Distribution System :	
Tools and Equipment	161,377.52
Line Hardware	5,450,770.19 (2)
Housewiring	2,093,700.87 (2)
Bank Charge (Estimate)	42,398.00
	<hr/>
	\$ 9,123,695.63
	=====

(1) Funded by USAID Grant

(2) Value of defaulted contracts not included.

SECTION X
RECOMMENDATIONS
FOR
COMPLETION

X. RECOMMENDATIONS FOR COMPLETION

CONSTRUCTION

1. Lampung.

At the end of December 1984 pilot projects in the Lampung service area were financially self-supporting and served approximately 4,000 consumers. In order for this area to progress satisfactorily, construction of the main projects must commence in the first quarter of 1985 to enable the system to be completed in the year 1985.

The commencement and timely continuation of system construction is completely dependent on the supply of raw wood poles, discussed in Section VI of this report, to the treatment plant. The raw wood pole supply contracts in effect at the end of 1984 do not cover sufficient pole supply. The requirement of treated poles for Lampung is at least 2,500 per month for seven months, before consideration of treated wood poles for the other service areas. It will be necessary for PDO/RE to immediately negotiate further contracts or purchase orders for a continuous supply of raw wood poles.

All other material is available for system construction. The revolving fund established for housewiring should be used to replenish the few minor items which have not been purchased in sufficient quantity. The funds also may be used to purchase housewiring material not supplied on defaulted contracts.

2. Luwu.

As stated previously in this report, system construction completed at the end of 1984 in the Luwu service area is estimated to be less than twenty-five percent. In the first quarter of 1985, construction will most probably be suspended due to the lack of treated wood poles.

A concerted effort should be made to ensure the supply of 3,000 more poles on site prior to the end of March 1985, otherwise, the contractor will have to demobilize only to remobilize later on receipt by the cooperative of treated wood poles. At the present rate of system construction, the balance of approximately 2,900 poles will be required in the month of June. This would enable construction to be completed in the third quarter of 1985.

Housewiring material requirements should be obtained in the same manner as for Lampung.

3. Lombok.

System: construction in the Lombok service area is almost completed, as described in Section VIII of this report. In this area the major shortage is also the balance of 150 treated wood poles. These could presumably be supplied from the treatment plant in Lampung, with the cost being deducted from the contract price of the current pole supplier.

The few line hardware items not available due to defaulted supply contracts could be purchased locally, funded by the Cooperative.

Housewiring material should be funded in the same manner as the other service areas.

PROCUREMENT

As shown in the procurement status tables (Section VI of this report) there are several contract items which have not been finalized and/or delivered to the various sites.

In order to finalize these items the following comments are made with respect to the "Notes to tables" shown on page VI-16 of this report.

1. Note 1.

Steps should be taken to collect on the performance bonds of these contracts. Proceeds should be used to purchase required undelivered material.

2. Note 2.

Where replacement material has not yet been shipped a decision should either be made as to whether the value of the material could be deducted from the retainage or whether replacements should be requested,

3. Note 4.

The generator equipment concerned is under manufacturer's warranty and therefore is covered in the event that there is a problem on start-up and testing. Other material is covered by a performance bond.

4. Note 5.

If the contractor has not made any effort to replace the material by the end of February 1985, the retainage on the balance of the respective contracts should not be paid and the value of the performance bonds should be collected.

5. Note 6.

Continued contact must be maintained through the clearing agent in Lombok with the shipping agents concerned in Surabaya.

6. Note 7.

Continued efforts should be made to clear this material.

7. Note 8.

No further action required except inspection and acceptance on receipt of material in Luwu.

8. Note 9.

Due to the loss of PDO/RE records in the office fire, duplicate records must be obtained from the locations prior to agreements being reached.

9. Note 10.

On receipt of material at site acceptance reports must be made and retainages paid.

10. Contracts not yet completed by the end of 1984 will require extensions of both letters of commitment and credit in order that retainages can be paid.

11. Wherever it is necessary to collect on performance bonds, PDO/RE should give serious consideration as to the advisability of "black-listing" the companies concerned from further participation in future tenders.

GENERATION

Every effort must be made to implement construction of power plants, or expand existing facilities, in all three service areas to meet the increasing demand for electric energy.

In each service area the number of consumer connections possible is seriously limited by current power generation capacity of the cooperatives. Even though extra generation capability is available at all three sites, it cannot become operable and "on-line" until the required power plant facilities are constructed, and the necessary synchronization equipment is made available.

APPENDIX 1
PHOTOGRAPHS



Typical three phase primary installation with single phase primary tap and underbuilt secondary and service drops.



Two phase primary with single phase transformer and service drops,



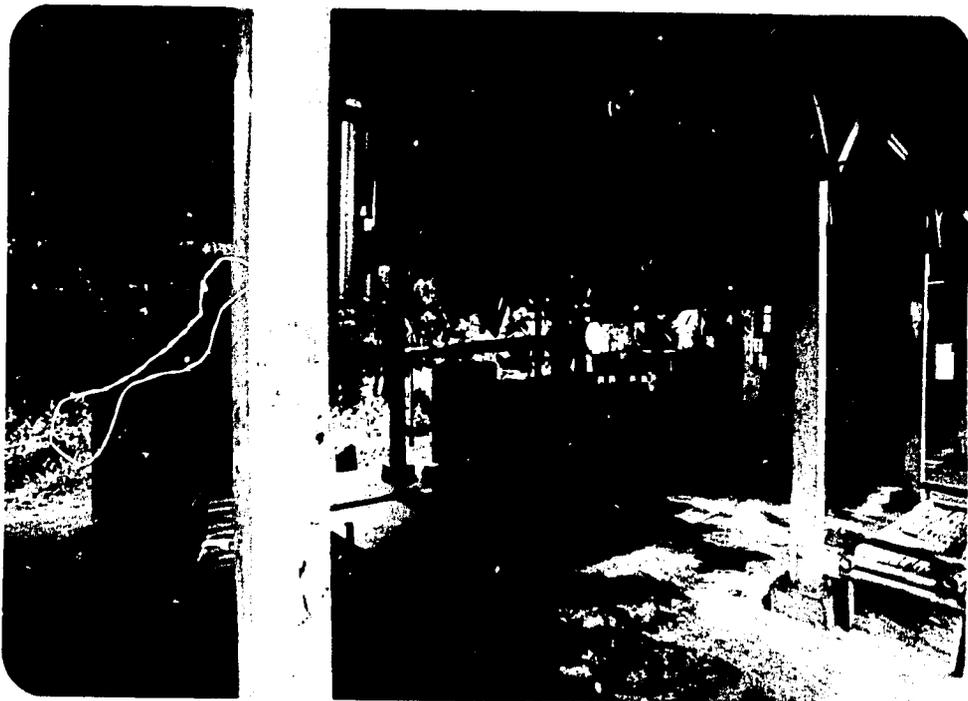
Single phase primary with underbuilt secondary, service drop and street lighting.



Three phase double deadend on an oil circuit reclosers installation.



Power plant for pilot project, Lampung service area.



Re-conditioned U.S, Government excess property generators.



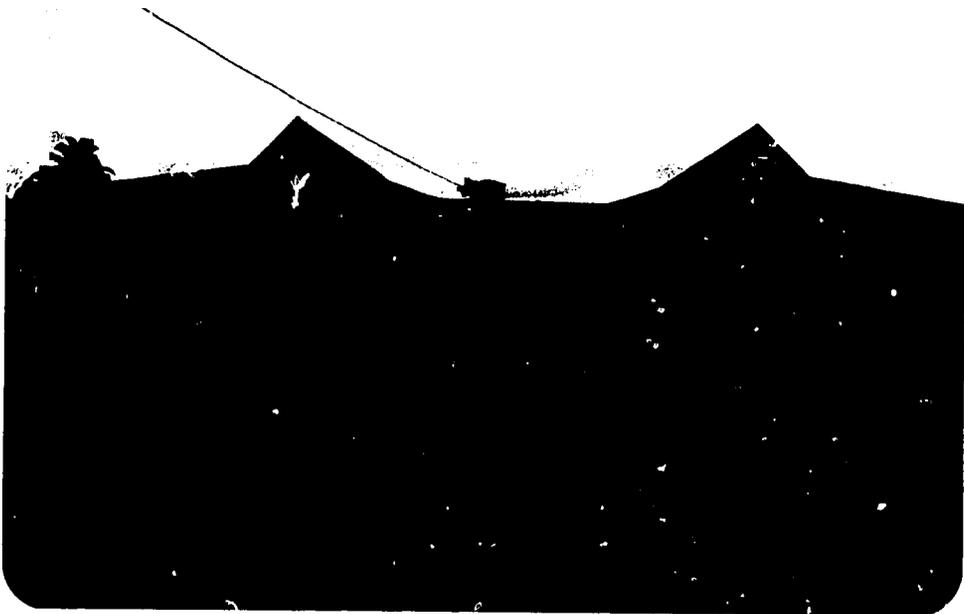
Typical Headquarters Complex showing open storage area
in background.



Warehouse building and surrounding security fence.



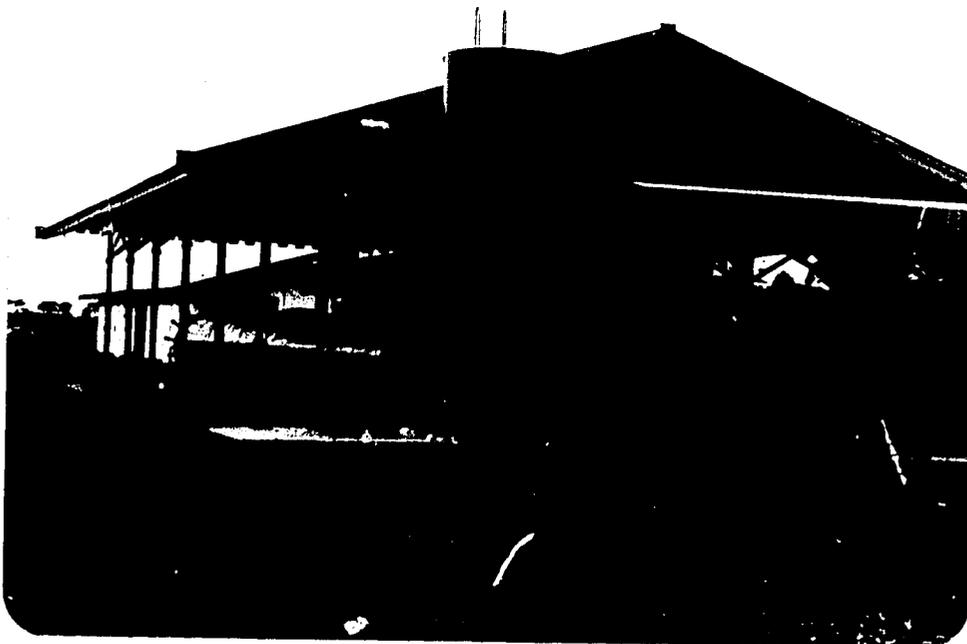
Front view of administration building and parking area.



Side view of administration building.



Pole treatment plant in Lampung with treated poles
on left.



Wood pole treatment "kettle" and preservative storage
tank.



The inferno at the project office building.



Project office space and records after the fire.