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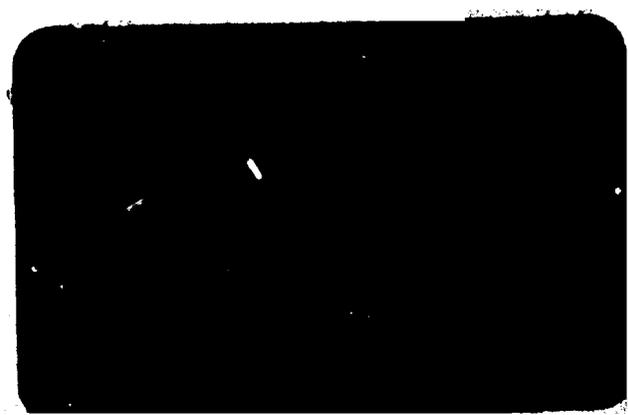
ISW-31544

RURAL ELECTRIFICATION PROJECTS

INDONESIA

4970267/53

PD-AAN-242



NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

JAKARTA, INDONESIA

NRECA TEAM REPORT

P L N

· INDONESIA

(APRIL - MAY 1983)

1

R E P O R T

NRECA INDONESIAN TEAM REPORT

UNITED STATES AGENCY FOR
INTERNATIONAL DEVELOPMENT

Contract No. AID/ASIA C1347

Loan No. 497-T-052

IMPLEMENTING AGENCIES:

DIREKTORAT JENDERAL BINA USAHA KOPERASI
Directorate General of Cooperatives Structure Development

PERUSAHAAN UMUM LISTRIK NEGARA
National Electric Power Agency

CONSULTANTS:

National Rural Electric Cooperative Association
Management, Organization and Training

C.T. Main International, Inc.
Architect and Engineering

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I. DESCRIPTION AND OBJECTIVES OF PROJECT (PLN)

The Government of Indonesia is vitally interested in the electrification of rural Indonesia, and has taken steps with the assistance of the United States Government (USAID) to implement pilot rural electrification programs. Fewer than 1% of the rural people in Indonesia presently enjoy the benefits of electric service. Rural electrification is essential in developing the wealth of forest and agricultural land, minerals, and water resources. The "area coverage" concept of electrification will bring better living conditions to millions of rural residents and will spread benefits to all of Indonesia.

Ten Pilot Rural Electrification Project areas have been selected. Seven of the projects are in Central Java and are to be constructed and developed by the state owned national power company (PLN) who will own and operate these systems. The source of power for these systems will be the existing PLN transmission grid in Central Java.

The National Rural Electric Cooperative Association through their International Programs Division is serving as consultant to PLN in organization, management and technical areas. Services for PLN includes providing assistance in organization of staffs to operate the systems in Central Java, as well as in cost accounting, O&M methods, housewiring and training.

SEVEN PLN PROJECTS

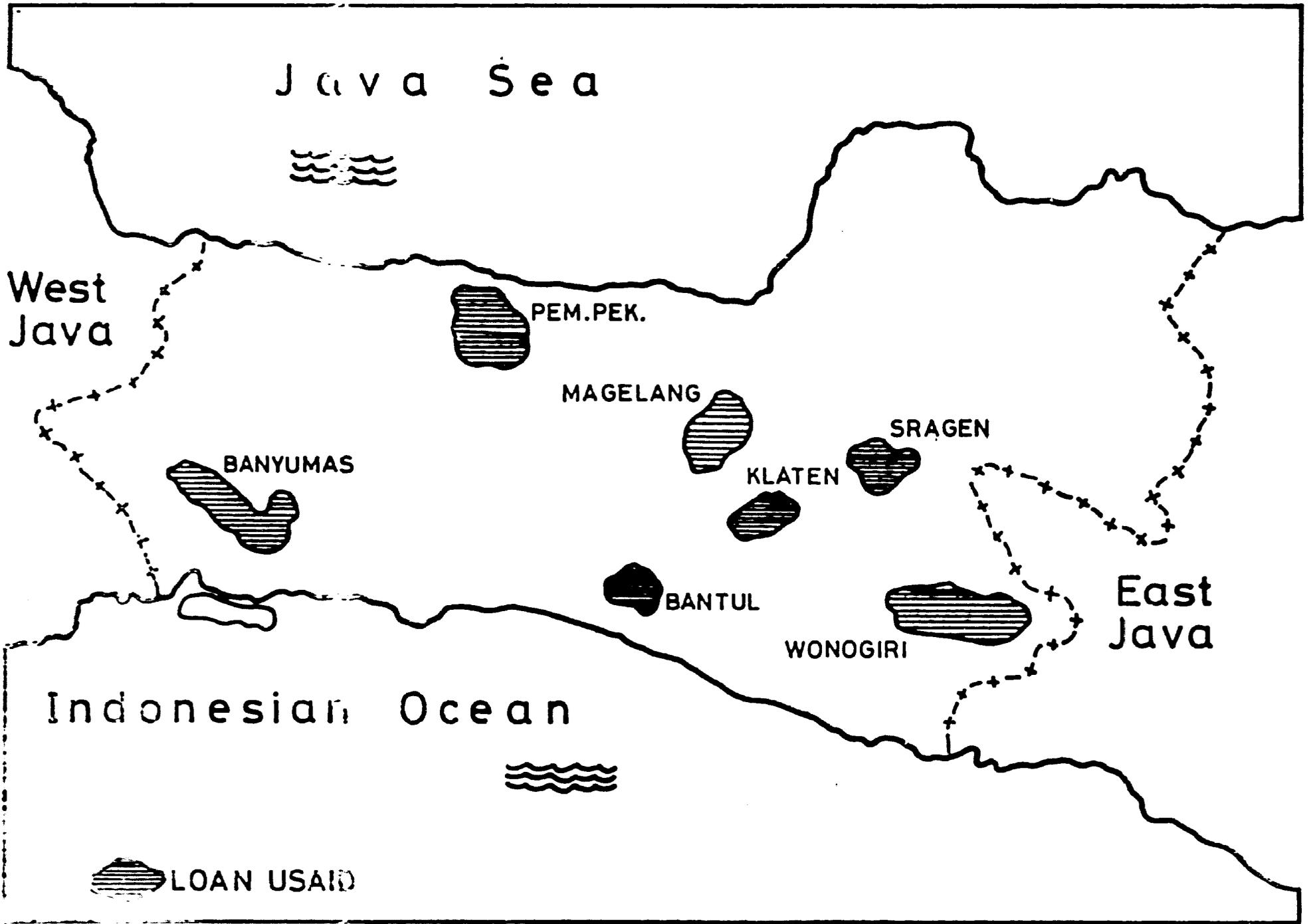
<u>SERVICE AREA</u>	<u>VILLAGES TO BE SERVED</u>	<u>APPROXIMATE NO. OF CONNECTIONS</u>	<u>ESTIMATED NO. OF RECEIPIENTS</u>
Klaten	95	25,000	225,000
Pem/Pek	103	20,000	180,000
Bantul	21	20,000	180,000
Wonogiri	54	15,000	135,000
Sragen	49	15,000	135,000
Magelang	83	20,000	180,000
Banyumas	35	15,000	135,000
TOTALS	440	130,000	1,170,000

The above tabulations are estimates for the end of the third year of commercial operation.

The personnel which NRECA is furnishing for the performance of this contract are as follows :

<u>NAME</u>	<u>TITLE</u>	<u>ADDRESS</u>
Ray Shoff	Team Leader/ Administrative/ Finance Officer	Ratu Plaza Apartment #1002 Jl. Jenderal Sudirman PH : 712209 ext. 2015
Louie Sansing	RE Project Advisor & PDO/Cooperative Training Coordinator	Jl. Galuh 1/4A Kebayoran Baru PH : 735478
Sam Adkins	PLN Project Advisor, Central Java, and REC Project Advisor	c/o C.T. Main Inc. Box. 26 Semarang PH : 024-312701
John DeFoor	REC Project Advisor, Luwu	KLP Samabotuna Desa Minna - Bone Bone Kabupaten Luwu South Sulawesi

CENTRAL JAVA



CENTRAL JAVA ACTIVITIES

I. ORGANIZATION & MANAGEMENT

During the reporting period, the construction branch of PLN in Central Java completed the schedule for the installation of the overhead electrical distribution of the seven RE Projects. This schedule indicated the desas that will be provided electrical service during the first and second semesters (6-months) of 1983-1984. It is expected that construction will begin on June 1, 1983.

PLN-P.I.Ring, the construction branch of PLN in Central Java, estimates that 194 Desas will be provided with electrical service during the first twelve months of construction; this relates to 44% of the total desas (440)

Installation of the overhead electrical distribution will be completed by force account under the supervision of the RE Construction Chief at PLN-P.I.Ring - Semarang.

It is estimated that over ninety-five percent of the overhead electrical construction material has already arrived in Central Java, and a large portion of this material has been transferred to each of the seven project locations. Items of material for the RE Projects, that have not arrived when required for installation, will be supplemented by material from existing PLN-P.I.Ring inventory in Central Java.

Included is a summary of overhead construction progress through the reporting period (page 10)

PLN Distribution, Central Java (formally PLN Wilayah XIII) upon receipt of the construction schedule from PLN-P.I.Ring, has began preparations for the housewiring program in the seven RE Project Areas.

Operations Branches of PLN in Central Java are entering the areas that will receive electrical service in the immediate future with the message of Rural Electrification. This most important function of the RE Program is being completed by coordination with local officials and the KUD (Local Community Cooperative).

Workmen who will estimate housewiring material requirements for each house, and workmen who will wire the houses, are presently being trained by PLN Distribution, Central Java Branch, instructors in each Project Area.

The KUD (Community Cooperative) will function as a housewiring contractor in each Kecamatan (similar to county) of the RE Projects. PLN will train the workmen and will provide the necessary hand tools to complete their housewiring responsibilities.

Over 98 %, of the housewiring material has arrived in Indonesia and a large amount of this material has already been transferred to the project warehouses.

At the close of the reporting period, PLN Distribution Central Java has energized approx. 13,800 houses in the seven RE Projects. It is expected that in the month of June, the housewiring program will be accelerated to include all of the houses where service is being provided. (See page #9)

HEADQUARTER FACILITIES

Representatives from PLN Distribution Central Java and PLN-P.I. Ring traveled to the new headquarters facilities of the seven RE Projects during the reporting period. The purpose of this trip was to inspect the buildings and grounds prior to transfer of responsibility from PLN-P.I. Ring to PLN Distribution Central Java.

Each headquarters facility consist of : An Administration Building with offices for management and Customer Services ; A warehouse Building containing operations and logistics offices plus secure inside-storage area; and an outside storage area of approx. 1 hectar for transformers, conductor, poles, etc.

TOOLS & EQUIPMENT

The tools and equipment for construction and operation of the seven Rural Electrification Projects have arrived in Central Java and have already been transferred to the Project Warehouses.

II. TRAINING

NRECA completed, and forwarded to the PLN RE Training Coordinator at PLN Pusat in Jakarta, the suggested course content and outline of the RE Training course "Operations & Maintenance of RE Systems".

This course contains thirteen (13) subjects directly related to the operations and maintenance of the PLN-RE Projects in Central Java, and is scheduled to be completed the last of July 1983.

A number of meetings were conducted at PLN Distribution Central Java with representatives from PLN and NRECA. Major topic of discussion was training of workers from the KUD (community cooperative) who will wire the houses. Training for this responsibility will begin on June 1, 1983, and will be conducted by PLN Operations Branch employees in each Branch where an RE Project is located.

PLN conducted training for PLN employees in each RE Project who will be responsible for Productive use of electricity. This training was conducted at Semarang & also Klaten in Central Java.

III. PLN RE DEMONSTRATION PROJECT

In May, 1979, PLN made electric service available to approximately 2000 houses in the villages of Jonggrangan, Karanganyam, and Gergunung as a Demonstration Project. These villages are located in the Klaten RE Project Area, one of the locations that make up the PLN/USAID RE Program in Central Java.

At the close of April 1983, the Demonstration Project was serving 2074 customers. Each customer consumed an average of 41 KWH for the month. The average KWH per month for the first four months of 1983 was 50 KWHs.

MEETINGS & TRIPS

- April 7 - Meeting at PLN Distribution Central Java computer office with Computer Chief & NRECA Counterpart in Central Java. Secure March-83 Billing statistics - RE Demonstration Project-and discuss use of computer in RE Projects.
- 11 - Meeting at PLN Distribution Central Java with Deputy Director and NRECA counterpart - discuss housewiring program and material transfer.
- 13 - Meeting at PLN Distribution Central Java with counterpart - review labor requirements for housewiring program.

- April 14 - Meeting at PLN Distribution Central Java with chief of Rural Electrification - review & adjust housewiring labor requirements for RE Projects.
- 16 - Meeting at PLN-P.I.Ring with Chief of RE Const. and NRECA Counterpart - discuss transfer of housewiring material from PLN-P.I.Ring to PLN Distribution Central Java at the Seven RE Project warehouse.
- 19 - Meeting at PLN Distribution Central Java with Chief of Rural Electrification - Discuss Housewiring Training, locations & dates.
- 21 - Meeting at PLN-P.I.Ring with RE Const. Chief-discuss transfer of housewiring material.
- 27 - Meeting at PLN Distribution Central Java with NRECA Counterpart - Discuss contents of RE Training course "Operations & Maintenance of RE Systems".
- 29 - Meeting at PLN-P.I.Ring storage facility, discuss condition of crossarms.
- May. 9 - Travel from Semarang to Jakarta for NRECA Team Meeting.
- 24-26 - Field Trip to all seven PLN RE Headquarters Facilities, PLN Distribution Central Java, PLN-P.I.Ring & NRECA - Inspect facilities.

KLATEN RE DEMONSTRATION UNIT

BILLING STATISTICS 15 MONTH PERIOD

COLUMN NUMBER									
	2	3	4	5	6	7	8	9	10
APRIL - 1982	92,115	1999	46	7.012,820	3508	2472	1035	54	76
MAY	111,327	1999	56	7.766,885	3585	2877	1008	52	70
JUNE	83,880	2002	42	6.624,385	3309	2312	997	55	79
JULY	90,763	2003	45	6.851,790	3421	2439	982	54	75
AUGUST	90,789	2017	45	6.925,820	3433	2436	996	54	76
SEPTEMBER	91,035	2023	45	6.932,821	3427	2430	997	54	76
OCTOBER	89,944	2039	44	6.973,715	3420	2045	1014	54	78
NOVEMBER	81,429	2043	41	6.799,980	3328	2299	1028	56	81
DECEMBER	97,623	2051	47	7.370,830	3583	2533	1048	53	76
JAN. 1983	116,113	2057	56	8.109,610	3942	2885	1058	51	70
FEBRUARY	118,870	2062	58	8.286,905	5045	4019	1026	70	88
MARCH	94,206	2069	45	8.966,390	4334	3313	1021	73	95
APRIL 1983	84,399	2074	41	8.486,160	4091	3010	967	74	100

COLUMN NUMBER

1. MONTH

2. TOTAL KWH BILLED

3. TOTAL CUSTOMERS BILLED

4. AVERAGE KWH PER CUSTOMER

5. TOTAL RUPIAH BILLED

6. AVERAGE RUPIAH PER CUSTOMER (TOTAL)

7. AVERAGE ENERGY CHARGE PER CUSTOMER

8. INSTALLATION & HOUSEWIRING CHARGE

9. COST PER KWH (RUPIAH) ENERGY ONLY

10. COST PER KWH (RUPIAH) TOTAL

PLN
CENTRAL JAVA RE PROJECTS
BILLING STATISTICS
MAY - 1985

1	2	3	4	5	6	7	8	9	10
PEKALONGAN	140,661	2562	54	19,068,690	7442	4066	3375	74	135
KLATEN	238,761	4366	55	29,085,435	6662	4928	1647	90	122
MAGELANG	40,692	1176	35	7,917,975	6732	2636	4096	76	194
WONOGIJI	16,704	270	62	1,314,310	4867	4314	481	70	79
SRAGEN	144,450	2331	62	11,991,045	5144	4394	688	71	83
PURNOKERTO	16,250	485	33	3,410,745	7032	2720	4312	81	209
BANTUL	167,059	2604	64	14,918,345	5729	4975	752	78	89
TOTAL/ AVERAGE	764,577	13.794	55	87,706,545	6730	4004	2193	77	130

Column Number

- | | |
|-----------------------------|--|
| 1. Project | 6. Average Rupiah Per Customer (Total) |
| 2. Total KWH Billed | 7. Average Energy Charge Per Customer |
| 3. Total Customers Billed | 8. Installation & Housewiring Charge |
| 4. Average KWH Per Customer | 9. Cost Per KWH, Energy only (Rupiah) |
| 5. Total Rupiah Billed | 10. Cost Per KWH, Total (Rupiah) |

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 PLN - RE PROGRAM
 CENTRAL JAVA
 ENERGIZATION OF DESAS

PERIOD : MAY - 1983. / JUNE '8

PROJECT	Total Desas	Desas Already Energized		Desas Energized 1st 6-Months		Desas Energized 2nd 6-Months		Desas Energized After 1st yr.	
		No.	Percent	No.	Percent	No.	Percent	No.	Percent
PEKALONGAN	103	16	16	19	18	16	16	52	50
KLATEN	96	24	25	20	21	20	21	32	33
MAGELANG	83	16	19	25	30	12	15	30	36
WONOGIRI	54	5	09	13	24	7	13	29	54
SRAGEN	49	12	24	13	27	13	27	11	22
PURWOKERTO	35	13	37	12	34	9	26	1	3
BANTUL	21	17	80	2	20	2	20	-	-
TOTAL / AVERAGE	441	103	23	110	25	84	19	144	33

PLN - RE PROGRAM
 CENTRAL JAVA
 CONSTRUCTION PROGRESS
 MAY 31, 1983

ACTIVITY	TOTAL IN PROJECT	TOTAL INSTALLED TO DATE	o/o OF TOTAL
POLES	61,354	44,031	71%
KM. OF PRIMARY CONDUCTOR	2,188.1	272.5	8.03%
KM. OF SECONDARY CONDUCTOR	2927.7	289.6	10.1%
TRANSFORMER	3389	445	7.6%

RE ACTIVITIES, CENTRAL-JAVA



Representatives from PLN Distribution Central-Java, and PLN P.I. Ring, inspecting the Sragen Project Headquarters Facilities in preparation for turn-over of facilities to PLN Distribution Central-Java. (Warehouse building in the background)



P.I. Ring construction crew loading conductor, to be used in RE Project distribution-system.

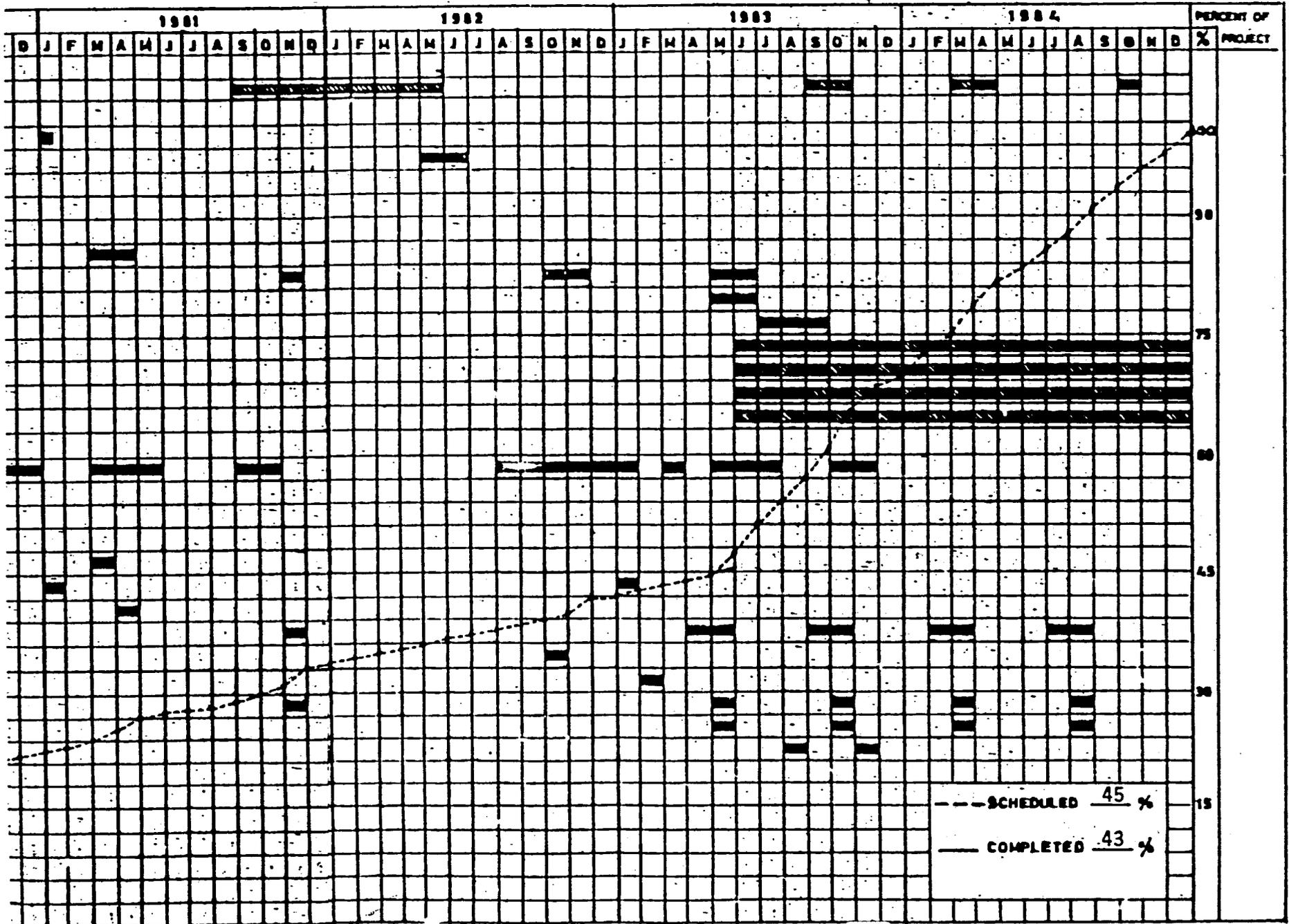
███ INDICATES PERIOD OF PERFORMANCE
 ████ INDICATES PERIOD OF EVALUATION

ORGANIZATION, MANAGEMENT & PLN-RURAL ELECTRIF

DESCRIPTION	1979												1980															
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
ORGANIZATION & MANAGEMENT	PROJECT IMPLEMENTATION PLAN — PREPARATION		██	██	██																							
	MAN POWER REQUIREMENTS CONST. — PLANNING			██	██																							
	MAN POWER REQUIREMENTS, OPERATING — PLANNING			██	██																							
	SELECTION OF MANAGEMENT PERSONNEL — ADVISING																											
	TOOLS, WORK EQUIP. REQUIREMENTS — ADVISING		██	██	██																							
	HEADQUARTERS COMPLEX REQUIREMENTS — ADVISING								██	██	██	██																
	BILLING & ACCOUNTING REQUIREMENTS — PREPARATION																											
	HOUSE WIRING & SERVICE DESIGN — PERFORMING																											
	REPORTING & MONITORING SYSTEMS — PREPARATION																											
	SELECTION HOUSE WIRING PERSONNEL — ADVISING																											
	SELECTION CUSTOMER CONTACT PERSONNEL — ADVISING																											
	SELECTION OPERATING EMPLOYEES — ADVISING																											
	BILLING & ACCOUNTING PROCEDURES — ADVISING																											
	REPORTING & MONITORING — ADVISING																											
	MANAGEMENT OF SYSTEMS — ADVISING																											
OPERATIONS & MAINTENANCE SYSTEMS — ADVISING																												
TRAINING	PREPARATION OF TRAINING MATERIAL & CONTENT																											
	MANAGEMENT PERSONNEL IN COUNTRY																											
	MANAGEMENT PERSONNEL OUT OF COUNTRY																											
	CONSTRUCTION SUPERVISION																											
	ACCOUNTING																											
	MATERIAL & EQUIPMENT LOGISTICS																											
	CONSTRUCTION LINE MAN																											
	CONSTRUCTION ELECTRICIANS																											
	KILOWATT HOUR METERING																											
	ENGINEERING																											
	CUSTOMER CONTACT																											
	METER READING, BILLING & COLLECTING																											
	OPERATION & MAINTENANCE																											

EMENT & TRAINING - PROGRESS SCHEDULE ELECTRIFICATION CENTRAL JAVA

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Summary of Expenditures

National Rural Electrification Cooperative Association
 1800 Massachusetts Ave., N.W.
 Washington, D.C. 20036

AID/ASIA - C 1347
 Date: April 1983
 Period of contract: 8/25/78 - 8/31/83

	Budget	Total Expense To Date	Prior Billings	Current Billings
Salaries - Field	\$ 1,205,000	\$1,111,913.62	\$1,099,506.71	\$ 12,406.91
Salaries - Home	216,000	194,506.83	190,169.69	4,337.14
Fringe Benefits	448,000	415,728.28	410,238.52	5,489.76
Consultant Fees	34,706	33,906.25	33,906.25	-
Allowances	418,000	353,111.96	350,484.29	2,627.67
Travel and Transportation	396,470	341,332.54	341,182.15	150.39
Other Direct Costs	148,824	103,567.80	102,553.74	1,014.06
Overhead	603,000	553,921.50	546,889.00	7,032.50
Equipment and Materials	30,000	20,739.58	20,739.58	-
TOTAL	\$ 3,500,000	\$3,128,728.36	\$ 3,095,669.33	\$ 33,058.43

PERSON-MONTHS BY POSITION, NRECA CONSULTANT TEAM

(Contract as amended March 14, 1983)

POSITION	PRESENTLY FILLED BY	CONTRACT PERSON-MONTHS	EXPENDED THIS PERIOD	EXPENDED THROUGH MAY '83		PERSON- MONTHS REMAINING	PERCENT OF CONTRACT EXPENDED
				PLN	PDO		
Team Leader (Administrative Finance Officer)	Ray Shoff	69	2	13.5	42.5	13	81 %
Senior RE Specialist/ Training Officer	Louie Sansing	63	2	7	45	11	83 %
Senior RE Specialist/ PLN - Advisor REC - Advisor	Sam Adkins	53	2	47	4	2	96 %
**RE Specialist Luwu-project Advisor	John DeFoor	47	0	-	47	-	100 %
*Administrative Officer	-	33	0	5.5	27.5	-	100 %
*Lombok Advisor	-	42	0	-	42	-	100 %
*Lampung Advisor	-	46	0	.5	45.5	-	100 %
Short Term Advisors	-	19	0	14	3	2	89 %
Consultants	-	8	0	7.5	.5	-	100 %
		380	6	95	257	28	93 %

* Positions vacated, July 31, 1982

** Position vacated February 2, 1983