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# Auditor General

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## AUDIT REPORT

WEST JAVA TRANSMISSION PROJECTS I AND II  
LOANS 497-H-028 and 497-W-032

USAID/INDONESIA

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Area Auditor General East Asia  
Agency for International Development

WEST JAVA TRANSMISSION PROJECTS I AND II  
LOANS 497-H-028 and 497-W-032  
USAID/INDONESIA

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	i
INTRODUCTION	1
BACKGROUND	2
SCOPE	5
RESULTS OF AUDIT AND RECOMMENDATIONS	
The Setting	6
Current Status of Project	8
Contractor Performance	10
Contractor Timekeeping Practices	15
Contractor Home Office Support	16
PLN Project Inputs	17
PLN Financial Status	18
Line Losses	21
Shipping Reports	23
WRAP-UP	25
EXHIBITS	
A - Financial Status of Loans	
B - Perspective: External Assistance Received by Indonesia for the Power Sector	
C - Fund Allocation Revisions, Commitments and Expenditures	
D - PLN-Past and Projected Income Statements (1974 through 1986)	
E - PLN-Past and Proforma Balance Sheets	
F - Shipping Report Inaccuracies	

List of Recommendations

## EXECUTIVE SUMMARY

As part of its regular surveillance of major loans and grants made to the Government of Indonesia (GOI), the Area Auditor General/East Asia (AAG/EA) conducted an audit of AID Loans 497-H-028 and 497-W-032 which finance the foreign exchange costs of certain power transmission and distribution facilities in West Java.

When viewed on its own this project has certainly had its share of slippage against original schedules, cost overruns, material delays, high turnover of key personnel and problems in acquiring rights of ways for transmission lines. Against a wider perspective of other massive infra-structure projects, carried out by either AID or other donors, these detrimental factors are by no means unique, but simply attest to the fact that -

1. Planners have not been very realistic in discounting some of the accomplishment norms in a multi-organizational up-country Indonesian environment;
2. Managers have not been very persistent in minimizing some of the impediments, particularly at a time when inflation places an extra premium on failure to reach certain goals and sub-goals within a given timeframe.

We have determined that the USAID/Indonesia has been or is now aware of all the critical issues that require attention to ensure that the revised completion dates, about 4 years late, and covering a reduced scope, at a higher cost, will be honored. Such continuous concern should extend to:

- Resolution of the rights-of-way bottleneck,
- Systematization of documents and reports due from the various participating organizations, including the introduction of a higher degree of discipline in submitting them to the USAID/Indonesia.
- Imposition of financial discipline into future loan agreements that are more in harmony with prevailing practices in the rest of the international financial community.
- Reassessment of the Indonesian Power Company's connection charge, in terms of being realistic and within the means of the rural consumer-customer. This issue gains in

importance when viewed against Basic Human Needs criteria.

- Intensification of the "Line Loss Prevention Program".
- Correction of administrative weaknesses related to shipping reports.

## INTRODUCTION

The Area Auditor General/East Asia has completed an interim audit of AID Loans 497-H-028 and 497-W-032, in Indonesia.

Loan 028 for \$17.2 million, finances the foreign exchange costs of designing and constructing 219 kilometers of 150 kV transmission lines from Tegal to Bandung, in West Java, erection of terminal facilities at Tegal and installation of substations at Dago and Bandung (Project Phase I).

Loan 032 for \$19.7 million, finances the foreign exchange costs of designing and constructing 180 kilometers of 150 kV transmission lines from Bandung to Jakarta and erection of a substation at Bogor (Project Phase II). The loan funds also finance engineering supervision, construction services and the purchase of supplies and materials.

The loans were made directly to the Government of Indonesia (GOI) for the benefit of Perusahaan Umum Listrik Negara (PLN), the GOI owned and managed national power company. The financial status of the loans is shown in Exhibit A.

## BACKGROUND

### The Power Sector in Indonesia

Indonesia's national power company, Perusahaan Umum Listrik Negara (PLN), a government-owned enterprise, is statutorily responsible for all generation, transmission and distribution of electricity in the country. Due to PLN's inability to meet the total demand, many industries and individuals have been permitted to install generating stations, largely consisting of small diesel generating sets, for their own use. These account for nearly half the total installed generating capacity in Indonesia.

The total generating capacity of PLN as of the end of January 1978 was about 1,700 Megawatt (MW), excluding the capacity of a hydro power plant in West Java from which PLN purchases the entire output of the power station.

While the oil price increases since 1973 redirected emphasis to hydro and coal sources of energy, power development plans for Java, for the next seven years are based primarily on oil-based steam generation.

PLN has projected a system-wide increase from 21.9 Terrawatt Hours (TWh) for the seven year base period 1970 through 1976 to 63.9 TWh for the next seven years, from 1977 through 1983. In its Power Development Program PLN has established a goal of 7,200 MW by 1987, with a 4,500 MW allocation for Java.

PLN envisions a 20 percent energy sales growth per year which is almost twice the 11.2 percent historical rate, but only about two thirds of the 30 percent demand rate projected for Java. When completed the two projects financed by the two loans will have added 399 kilometers of transmission lines to a system which at the end of January 1978 consisted of a network of about 3,800 kilometers, operating at voltages from 25 kilovolt (kV) to 150 kV.

While PLN has made some rapid progress in the power sector, in recent years, its annual per capita power consumption remains, at 22 kilowatt hours (kWh), one of the lowest in both Asia and the World.

<u>Country</u>	<u>Per Capita Consumption</u>
Indonesia	22 kWh
Sri Lanka	80 kWh
Thailand	170 kWh
Philippines	250 kWh
Malaysia	450 kWh

The island of Java, though covering only seven percent of the land area of Indonesia, has about two-thirds of the total population and accounts for about 75 percent of PLN's supply. West Java, at January 31, 1978 accounted for 836 MW installed capacity out of the island-wide total of 1,255, equal to 67 percent.

PLN's development program was based on a study made by a World Bank financed consultant, Preece, Cardew and Rider (PCR). Apart from generation and distribution expansion, the program takes into account the inter-connection of the Western and Central Java system by 1980, and East Java by 1981, to form an All-Java power system.

The primary objective of AID Loans 497-H-028 and 497-W-032 was to participate in a multilateral effort to rehabilitate and develop the Indonesia power system. This effort was assigned a high priority because Indonesia, in the early 1970's had one of the lowest annual electricity consumptions anywhere in the world.

AID loans, as originally conceived, were for a West Java transmission and distribution system as recommended by an International Bank for Reconstruction and Development (IBRD) financed West Java power system study. This study was made by Charles T. Main, the Consulting Engineer, who is also the engineer for both Loans 028 and 032. The two AID loan financed projects were originally designed in two phases.

Phase One (Loan 028) was originally intended to provide engineering and construction of a 150 kV double circuit transmission line, linking the cities of Bandung, Cirebon and Tegal, a distance of 219 kilometers. The transmission link was to include sub-station at Cirebon. The loan was authorized June 26, 1972 but a Consulting Engineering contract was not signed until February 1974.

In April 1976 AID/W approved a PLN plan to reduce the scope

of the project by eliminating the rehabilitation and expansion of the distribution system in Cirebon, eliminating the terminal facilities at Bandung and adding substations at Bandung and Dago. Extreme price escalation prevented carrying out the original project plans within available funding limitations.

The Phase Two project (Loan 032) was authorized on August 6, 1973 and the Consulting Engineering contract, was signed in January 1975. The original intent of Phase Two was to design and install a 150 kV transmission line, from Bandung to Jakarta, with a substation at Bogor, and line terminals at Bandung and Jakarta. The project also included rehabilitation and expansion of distribution facilities in Bogor.

When AID approved the reduced scope of Phase One, a corresponding reduction in the scope of Phase Two was made. As a result the rehabilitation and expansion of distribution facilities in Bogor were dropped. The eliminated parts of both loans were subsequently financed by other donors (French, Danish and IBRD).

In the course of our field work we were told that the projected completion dates for Phase One and Phase Two would be late 1979 and late 1980, respectively. Participation at the PLN Monthly Review Meeting, on Saturday, September 1, 1979, caused us to request a reassessment. This led to a revised completion of Phase One (transmission) to April 1980, and Phase II (Substations) to July 1981.

Based upon these updated projections, both projects are approximately 2-1/2 years behind their scheduled completion dates, or 4 years in terms of completing the entire project.

## SCOPE

Our audit covered the period from March 1, 1976 to August 31, 1979.

Its purpose was threefold:

1. To determine if U.S. resources were being utilized in accordance with U.S. legislation and regulations.
2. To determine if U.S. resources were being used in an economical and efficient manner.
3. To determine if the anticipated results of the project are being achieved.

More specifically, we wanted to determine whether the activities financed with AID loan proceeds were being carried out in accordance with the terms of the loan agreement and AID regulations, and to identify and report any problems requiring corrective action.

This was a full scope audit as defined in prescribed standards for government audits. Our effort included visits to the USAID/Indonesia Mission in Jakarta, the field office of the contractor and agencies of the Indonesian Government. We reviewed documentation, observed project activities and held discussions with responsible officials to the extent deemed necessary to comply with the prescribed standards.

## RESULTS OF AUDIT AND RECOMMENDATIONS

### The Setting

United States objectives, during the project conceptual phase in 1972, were to sustain Indonesian economic and political stability and to develop a sound infrastructure for economic growth. At that time the United States directed its aid through the Inter-Government Group on Indonesia (IGGI), composed of Indonesia, eleven other member countries, the World Bank (IBRD), the International Monetary Fund (IMF) and the Asian Development Bank (ADB). Assistance through this multilateral framework minimized political problems, assigned a range of initiatives to the Indonesian Government (GOI), and provided a vehicle by which member countries could direct assistance to clearly identified projects.

The IBRD financed West Java Power Systems Study led to a recommendation by the Charles T. Main, International, Inc. (CTM), Consulting Engineer, for a five year expenditure of US\$315 million, for the expansion of generation, transmission and distribution facilities for the province.

The two AID-financed loans, for US\$17.2 million and US\$19.7 million, respectively, included distribution systems and transmission lines, as well as substations. But due to inflation-fueled cost increases the distribution systems had to be subsequently eliminated and have since been funded by other donors:

<u>Lender</u>	<u>Amount</u>	<u>Est. Completion</u>
Asian Development Bank	US\$34.5 million	1982
Kuwait	30.0	1981
Abu Dhabi	14.2	1981
World Bank	16.0	1979/80
Asian Development Bank	31.5	1982

The project revision eliminating loan financing for the distribution systems was approved by the AID Administrator in April 1976. The Phase I Plan called for Loan 028 to provide

a transmission line and substation material only, with PLN work forces erecting the line and constructing the substations. Loan 032, tied to the Phase II Plan, had comparable restrictions.

The original project plans underconcerned themselves with the PLN implementation of property owners' indemnification for the acquisition of rights of way, at an estimated local currency cost equal to US\$4.3 million for Phase I and US\$3.6 million for Phase II, respectively. This calculated risk has developed into a major impediment of the timely completion of the projects and will be dealt with, in greater detail, later in the report.

Revised planning assumed the PLN construction and management capabilities were to be enhanced by its development of a construction work force which at project completion would be experienced and trained in transmission line construction and available for future such efforts in other Indonesia power sector projects. However, the plan for PLN construction was later changed to provide for local construction primarily by Indonesia contractors since PLN did not have sufficient work force to assume all construction responsibilities on Phase I. On Phase II PLN forces perform inspection and construction supervision.

The description of the respective projects were as follows:

<u>PHASE I (028)</u>		<u>PHASE II (032)</u>
The overall project covers the design, procurement, construction supervision, technical assistance, managerial assistance and training required in connection with:		The overall project covers the design, procurement, construction, supervision, technical assistance, managerial assistance and training required in connection with:
1. New 150 kV double circuit transmission lines connecting Tegal, Cirebon and Bandung;		1. New 150 kV double circuit transmission lines connecting Jakarta, Bogor and Bandung;
2. New 150 kV substation at Ujungberung, and switching facilities at Tegal;		2. New 150/70/20 kV substation, and switching facilities at Bogor and Bandung;

- |  |   |
|--|---|
| 3. Installation of adequate protection system for transmission and sub-station system; | ' 3. Installation of adequate protection system for transmission and sub-station systems; |
| 4. Provision of tools and service equipment for system operation and maintenance;      | ' 4. Provision of tools and service equipment for system operation and maintenance;       |
| 5. Furnish PLN a library of technical books related to the electric power industry.    | ' 5. Furnish PLN a library of technical books related to the electric power industry.     |

A comparison of the two Phases limits the variability to steps 1 and 2.

Exhibit C shows the progressive impact of funding allocations, together with the latest revision against which actual costs are being reported.

### Current Status of Project

The current estimate of project completion by mid-1981 means that it has slipped by about four years, in terms of original plans and expectations. The cash flow forecast prepared in 1972 envisioned final disbursements to be made in 1977. In that respect it was consistent with the implementation schedule which placed a 48 months ceiling on the completion of 28 specific line items, ranging from criteria selection and site locations to finalizing construction. What went wrong?

1. Excessive preparation time for Invitation for Bids (IFBs), by
  - a) PLN
  - b) The Engineering Contractor
  - c) AID
2. Excessive time devoted to the evaluation of bids by the same principals.
3. Excessive time devoted to
  - a) Making awards

- b) Issuing contracts
- c) Preparing Letters of Commitment and Letters of Credit.

Contract awards whose processing required in excess of one year were common place. Both the substations and communications system fell into that category. Copper-wire procurement was hit particularly hard by virtue of extended AID/W delays in issuing Letters of Commitment.

- 4. Need to reroute some transmission towers, at the request of Indonesian military and housing authorities.
- 5. Delays in tower foundation construction by local contractors, and the need to rework some because of unacceptable quality.
- 6. Delays in arrival of steel required for the erection of towers.
- 7. Acquisition, by PLN, of rights of way for transmission lines from property owners.
- 8. Delays in compensating property owners for making agreed upon payments.

In the course of our field work we were told by a PLN official that rights of way acquisitions through April 1979 amounted to approximately 60 km and 55 km, respectively for the two respective divisions. The process was being seriously delayed by the GOI's lack of control over adamant property owners refusing current indemnification offers.

During the final debriefing, on September 7, 1979, we were assured by Mission Engineering Officers that "by October 1, 1979 90% of the rights-of-way acquisition will be completed." Further questioning revealed, however, that the 90% would be in the sparsely populated center-section, leaving about 5% each in the densely populated urban areas at each end yet to be resolved. It was then agreed that this would represent "the difficult part."

Indonesia does not enjoy the "power of eminent domain", a relief provision available to most governments against recalcitrant landlords. Settlement is further complicated by virtue of the fact that many landlords live abroad. Therefore the Mission's

overreliance on a 90-day "safety cushion", before tardy acquisition will seriously impact on wire-stringing operations, strikes us as being tinged with unwarranted optimism.

In Indonesia, where recent inflation rate experiences has averaged about 23% during 1970-1976 annually, a 4 year slippage has, reduced the local currency expenditures purchasing power by about 90 percent.

The original US loan package, conceived and approved to deliver a US\$36.9 million development punch, will, assuming a 25% concurrent buying power erosion, minimally lose one quarter or US\$9.2 million of its effectiveness, on account of the various factors cited above. For example, the original project was revised and other donors assumed the delivery of about \$20 million in project inputs.

Repetitions of comparable situations may possibly be avoided by writing future contracts on an incentive basis. AAG/EA is currently exploring the practicality of selective applications of incentive contracts, to both AID direct as well as host country contracts. Because of successful applications under far more esoteric conditions than the design and construction of power systems we believe that significant cost savings may be achieved by judicious use of this frequently neglected contracting tool.

We were originally told that substation bids and evaluations related to Phase II construction contracts were scheduled for July 1979.

On September 1, 1979 the contractor representative for substations reported that because of insufficient money in the budget there now existed a need to rebid. The shortfall in funds was estimated in the 50 to 60% range, for that specific line item. But because contractors were becoming more competitive and in the process were eliminating selective discretionary items this gap would be significantly narrowed. To the obvious question, "Why were the electives in the original bid plans?" the answer was that elimination simply defers certain costs, which will subsequently manifest themselves by higher downstream repairs and maintenance charges. A realistic timeframe for PLN (re) bid evaluations is likely to be in the 1 to 3 months range.

#### Contractor Performance

The beneficiary, PLN, selected CTM of Boston, Mass. as the Engineering Consultant on the project. CTM had previously

performed the IBRD-financed West Java Power System Study, and was one of the prequalified candidates competing for this implementation contract. Consultant contracts were issued for Phase I on February 16, 1974 and for Phase II on January 27, 1975, calling for the following services.

Engineering Design and Development Procurement  
 Construction Planning and Contracting  
 Engineering Supervision and Construction  
 Construction Project Management and Training  
 Supervision

Original plans to provide for transmission, substations and distribution, for both phases, had to be modified as a result of a 1975 engineering cost estimate which disclosed insufficient funds to finance all of the proposed work.

As a result the scope of the project was reduced to eliminate the distribution systems which are now being financed by other foreign donors.

The engineering contract cost funded levels have increased significantly since their inception. The Phase I contract has risen from an estimated cost of US\$1.4 million including \$0.2 million in Rupiahs to US\$3.8 million including \$0.4 million in Rupiahs. The Phase II costs similarly have risen from an initial level of US\$1.6 million including \$0.2 million in Rupiahs to US\$2.5 million including \$0.3 million in Rupiahs.

Cost increases were partially attributable to scope changes, but also due to various delay factors commented on previously under "Current Status of Project", and the inflationary effect of those delays.

During the five year time period that elapsed since the signing of the original Phase I contract, on February 16, 1974, and the effective date of Amendment No. 3 on January 10, 1979, the following key changes took place:

<u>Item</u>	<u>2/16/74</u>	<u>1/10/79</u>	<u>% Change</u>
Men Months (MM), Overseas	200	461	+ 131
MM, Home Office Support	82	244	+ 198
MM, Home Office as % of MM, Field	41	53	+ 29
MM, Consolidated	282	705	+ 150

<u>Item</u>	<u>2/16/74</u>	<u>1/10/79</u>	<u>% Change</u>
Average Monthly Salary, Overseas	\$1,430	\$ 1,731	+ 21
Average Monthly Salary, Home Office	1,431	1,768	+ 24

Two hundred three MM in the overseas category, in 1979, covered occupational specialities not provided for in the original contract, led by 73 MM of Construction Superintendence, Within continuing skills groups, Substation Engineering increased from 6 MM to 33 MM.

Within Home Office Support two classifications went up significantly: Engineers, from 12MM to 70MM, and Designers, from 6 MM to 30 MM.

The combined impact of scope changes and enlargements, rate increases, additional Home Office Support, as well as other line items not directly related to people on board and their associated compensations costs, was to increase the US dollar portion of the Phase I contract with CTM by 180 percent.

Did the lender and the borrower receive commensurate additional value? In our opinion, there exist several areas where the Contractor could have exercised better initiative, judgement and/or management control by --

1. Identifying some of the causes that led to abnormally high field engineering personnel turnover, solving the problems and reversing the trend.
2. Articulating, during the early phase of the contract, late arrival of key material more strongly, or based on past experience -- to protect the buyer's interest by enforcing the provisions of the Liquidated Damages clauses. By 1979, however, the contractor had demonstrated improvement in this area.
3. Anticipating more realistically the potential difficulties likely to be associated with the acquisition of rights of ways, and to become more actively involved in a collective solution effort.

Since inception of both contracts CTM has experienced an unusually high staff turnover resulting in project delays and additional contract costs. Of the twenty-eight CTM personnel assigned progressively to the project:

- 5 employees completed less than 10 months service, before resigning ;
- 1 employee completed 8 months and resigned due to illness;
- 4 employees resigned or were transferred after completing 18 or more months of their tours;
- 1 employee completed only 18 months of a tour due to illness.

The turnover in Project Managers (4 to date) has contributed, according to a 1977 USAID/Indonesia estimate, to delaying the project by at least six months, and additional delays have since occurred. Recently, the CTM Construction Manager resigned after less than 8 months in country. The Contractor has elected not to replace him and instead, split his duties between the Transmission Engineer and Substation Engineer. This raises the question as to whether there ever existed a genuine justification and need for this position. The Equipment Superintendent and Administrative Assistant also recently resigned in April, 1979 after spending just eight and ten months respectively in their positions. We calculated the transportation and relocation costs to the Borrower during the brief tenure of these three employees to be approximately \$25,000 over and above their monthly salaries, differential and allocated overhead. We were advised by CTM that when employees resign before serving a year at post the contractor requires the employees to pay for their relocation cost to the U.S.

In the light of repeated and widespread experiences concerning delays of up to 12 months in delivering project commodities on time during the early phase of the project, there appear only two solutions in preventing future recurrences:

1. Liberalize the duration of the procurement cycle;
2. Enforce the terms of the procurement cycle, particularly when its duration has been determined to be realistic.

When materials are as critical to the success of a project like West Java Transmission, then extra efforts need to be expended to ensure that they will arrive as scheduled. The timely arrival increases in importance when significant workforces have been mobilized and trained, for the specific purpose of converting these materials into deliverable system. Even more emphasis is being added by the realization that each week's delay has a measurable dollar value of as much as US\$44,200 (US\$9.2 million divided by 208, where 9.2 million represents a conservative estimate of the combination of inflation and cost escalation, and 208 represents the 4 year delay, as expressed in the equivalent terms of 208 weeks). Given the chance to save almost US\$9,000 per working day, such awareness ought to act as powerful stimulus to ride herd over all operational aspects of this project.

The Mission took repeated and sharp exception to our position, urging earlier and more senior level involvement in actual or potential problems, claiming that "micro-immersion into project level work packages was 180 degrees at variance with its most recent instructions."

Because CTM, the principal contractor, has demonstrated that material can be shipped by sea from U.S. destinations, AND cleared through Indonesian customs in an average of 70 days for 26 shipments, to the genuine surprise of many skeptics, we urge that his techniques be evaluated on all materials-intensive projects in Indonesia.

Recommendation No. 1

USAID/Indonesia study CTM's material expediting methodology and extend it to all other materials-intensive projects in Indonesia.

Inability to obtain the proposed rights of ways and the lack of jurisdiction on the part of the GOI to resolve related problems, is likely to have a further negative impact on the overall completion of the project.

We are of the opinion that inasmuch as the electrification of Indonesia has been a priority preoccupation of IGGI, USAID/Indonesia, as well as a number of key participating contractors, the matter of rights of way acquisition should have received far greater attention, at appropriately senior levels of all

concerned organizations. The minutes of many interviews and meetings contain a common theme whereby the working technicians "have reached the end of the line", while senior management is reluctant to intervene "just yet", with contacts at that level being reserved for "real big issues".

The rights-of-way problem has reached its current degree of severity as a result of a calculated risk on the part of the Mission at the time the loan agreement was signed, by accepting, on what amounts to a "handshake basis", the GOI's promise that the subject would be worked on a "Resolve-As-The-Project Progresses" tandem arrangement. The Mission, at the time it was agreeing to this, was attempting to make up for lost time, and the files state that this understanding meets all of the Loan's Conditions Precedent. It is, in our opinion, the combination of the original calculated risk, together with the interim lack of senior management involvement, that has brought about the current threat to delay project completion further. Under those circumstances we believe that frequent middle management statements, expressing pride in things already accomplished and optimism in those about-to-be-accomplished, to be sincere, but unrealistic.

#### Recommendation No. 2

USAID/Indonesia, notwithstanding an imbalance of available project managers to the Mission-wide project portfolio, involve itself at that level of management, at such frequencies, as to bring about the removal of the Rights-of-Way issue as an impediment to on-time project completion.

#### Contractor Timekeeping Practices

Our review of CTM field staff timekeeping during CY 1978 indicated that salary costs charged to the project were generally supported by employee time cards prepared bi-weekly, although the cards were approved by a timekeeper or the employee's supervisor. In a number of instances employee time cards were not available as evidence of work performed on the project. Invoiced salaries unsupported by appropriate time cards amounted to \$40,962 and with overhead and differential costs applied, the total amount questioned is \$88,878. We recommend that PIN audit CTM timekeeping support for other invoiced salaries, as

well as other direct costs, and make appropriate reduction in contract reimbursements for field salaries billed not properly supported and any other costs not in compliance with the terms and conditions of the contracts.

### Recommendation No. 3

USAID/Indonesia follow up vigorously its understanding of PLN's willingness to initiate an audit of the Engineering Consultant Contract's direct costs. Minimally, this should include a timeframe for starting and completing such an audit.

### Contractor Home Office Support

We have previously commented, under Contractor's Performance, on some recent trends in level of effort and related costs, for selective indices, particularly with respect to changes that occurred since the first contract went into effect, in 1974.

In the course of our review we noted that CTM Home Office hours charged on Phase I to "Substation and Communications" averaged 832 hours every four weeks during 1978. Phase I substations were to be constructed by Indonesian contractors as was the case under a previous AID loan (025) financed power project for the Ketenger System in Central Java.

Under the latter project, CTM produced substation structural designs, as well as the design parameters for a communication systems. CTM considered the maximum use of Indonesian materials and local construction labor. This represented a significant expenditure of engineering manpower by the CTM Home Office. Project files indicated that the Ketenger substations designs were satisfactory and we were told they were similar to those planned for the West Java project. We understand that PLN has agreed to this additional design effort on this project, rather than achieving reduced costs by use of the existing Ketenger substation and communications design. When we recommended that USAID/I make a further determination of this matter, the Mission stated its support for the PLN position, by saying:

"Transmission substations and communication systems seldom can be duplicated by using the design of one station or system for construction of another in a different location under different conditions and parameters. In other words, each transmission substation and communication system normally requires a tailor-made design to satisfy the functions demanded of the equipment and to physically adapt to the site.

In the case of Java I and II using Ketenger Project designs, not only would the normal differences be encountered, but due to the mix of equipment (French, German, etc.), the many facets of insuring compatibility of American Equipment with the equipment from other countries have to be solved and incorporated in engineering design. It would not be feasible to use Ketenger design for the Java Project."

#### PLN Project Inputs

The Capital Assistance Papers for project loan 028 and 032 provided that the Rupiah equivalent of US\$5.8 million and US\$3.9 million, respectively, were to be provided from the GOI National Development Budget. They were to supplement the dollar financing under two loans, of \$17.2 million and \$19.7 million, respectively.

In addition to financing local construction costs, compensation for rights of way, and PLN work force salaries, Rupiah funds were to support the logistical requirements and the office staff of the Engineering Contractor.

Based on the present exchange rate of 620:1 the total minimum Rupiah input to the project is 6,014 million Rupiah.

Funds budgeted by the GOI through March 31, 1979 (the most recently completed fiscal year) for PLN support of these projects in West Java are in excess of 27,000 billion Rupiah, equal to US\$43.5 million. We made this determination at the PLN Planning Office in Jakarta, and it suggests a continuing high level of priority.

## PLN Financial Status

The several power loans financed by AID, including those for West Java, share an annual audit requirement of PLN's books and records, by independent certified public accountants.

PLN's charter stipulates that their accounts are to be audited annually by the Directorate of State Accountants which is part of the Directorate General of State Financial Control.

We could not locate any of the loan-required audit reports on PLN operations at USAID/I, but were able to obtain copies for FYs 1976 and 1977 from the Directorate of State Accountants, directly. The audit and publication cycle last in excess of one year: The report for the Fiscal Year ending March 31, 1977 was dated April 21, 1978. We also have PLN's unaudited "Annual Accounts" for FY 1978.

### Recommendation No. 4

USAID/Indonesia produce a Master Check List of all documents and periodic reports which are a mandatory requirement under the two loan agreements, and introduce and maintain the necessary disciplines related to their timely submissions.

PLN's accounting procedures were initially developed with the aid of a French Management Consulting firm, Sofrelec. Financed with IBRD assistance, the six year task covered the period 1970 through 1976, with Peat, Marwick and Mitchell (UK) providing assistance in accounting matters.

After reviewing the recent reports put at our disposal we arrived at a number of conclusions which were virtually identical with those of other lenders: There needs to exist better visibility and/or justification for the --

- Provision for Inventory Obsolescence
- Provision for Bad Debts
- Analysis of Accounts Receivable

These are PLN areas of concern which will be investigated by an independent PLN-sponsored private auditor who is tasked to do so in the course of a one-time management review for FY 1979.

Another major donor concluded that, in their opinion, neither the internal report nor the external audit performed by the Directorate General of State Financial Control, stressed sufficiently the adequacy of financial control procedures. They also took issue with the timeliness of the report. The scope of the management audit will include an examination of the adequacy of:

- PLN's budgeting procedures
- PLN's inventory control system
- PLN's analysis of accounts receivable
- PLN's accounting for fixed assets
- PLN's project accounting

Exhibit D and E portray comparative Income Statements and Balance Sheets, partially on a historical and audited, partially on a historical and unaudited, and partially on a projected basis, for the periods 1974 through 1986.

During the three-year period ending March 31, 1977 PLN's operating performance improved considerably. Sales volume increased by 26.4 percent, while average tariffs went up by 65.2 percent, from Rp. 16.4/kWh in 1974/75 to R. 27.1 kWh in 1976/77. During the same period, energy losses declined slightly, from 26.9 percent of sales to 25.2 percent of sales. Because of its great importance, the subject of energy or line losses will be treated as a separate subject.

Overall results showed unaudited profit of Rp. 1.0 billion in 1976/77, after two consecutive years of losses. This improvement, while satisfactory, could probably have been even better, if it had not been for:

- the persistently high level of energy losses
- a sharp increase in personnel expense (30 percent)
- the large (15 percent) provision for inventory losses.

The balance sheet revealed a doubling of gross fixed assets and work in process, from Rp 316 billion to Rp 664 billion.

The March 31, 1977 Accounts Receivable balance of Rp. 20.6 billion include Rp 7.7 billion outstanding for more than one year. Of this amount Rp. 4.6 billion related to accounts of GOI departments of state enterprises. Even with this aging profile the total amount was only equal to 90 days' sales,

as compared with 104 days' sales, two years earlier. But whereas other lenders insist that accounts receivable be kept at or below 90 days' sales we found no evidence that AID had similar requirements. AID was therefore the beneficiary of other organization's financial disciplines rather than a catalyst in its own rights.

Because in other situations AID may very well be the only lender we suggest that AID adopt comparable safeguards in its future dealings with borrowers.

#### Recommendation No. 5

USAID/Indonesia, in conjunction with Capital Development in AID/W, insert a covenant into all future loan agreements putting ceilings on all accounts receivable balances, when measured against current sales that correspond with prevailing industry practices.

Specific instructions have been issued subsequently by PLN concerning the write-off of old arrearages and future collectability criteria.

Another balance sheet item, fixed assets, has been subject to much more stringent accountability and valuation of disciplines, by other lenders as compared with AID. Because fixed assets valuation has a direct impact on depreciation expenses, and therefore profit and loss, AID needs to assure itself that it does not only receive financial statements, on a pro forma basis, but that these financial statements are meaningful and comply with groundrules and criteria followed by the financial community at large.

As long as AID is an active member of IGGI it would appear that all members should standardize its loan covenants format.

#### Recommendation No. 6

USAID/Indonesia raise the question of conforming all future loan agreements to a format generally being followed by all other IGGI members, with AID/Washington, particularly with respect to insisting on certain basic financial disciplines.

Recent electricity sales amounted to Rp 84 billion and Rp 97 billion for FYs 1977 and 1978, respectively. This compares with Rp 41 billion and Rp 54 billion, respectively, in the Capital Assistance Paper for loan 028. But because tariffs have more than doubled, actual consumption is slightly below forecast, because sales growth is exclusively a function of rate increases, rather than usage. One of the reasons demand is lower than expected may be due to the high connecting charges, Rp 84,000, or US\$135, per connection.

The average Gross National Income in Indonesia, in 1976 on a per capita basis was US\$240. Therefore the connection charge, at US\$135, represents almost 7 months' income for the average Indonesian. Translated into the U.S. domestic economic picture, this means that an American earning \$12,000 a year, would have to pay \$7,000 to have his home connected to the national electric system. Based on these data we believe that this fee needs to be reassessed more realistically.

At the time of our exit conference the Mission made available to us certain literature dealing with lower and more liberalized connecting charges. Close examination revealed that these substantially lower charges were applicable only to the Rural Electrification Program, and not to the conditions to be found under the West Java Transmission project. Our renewed research effort to portray as realistic a picture as possible confirmed the validity of our original presentation of facts.

#### Recommendation No. 7

USAID/Indonesia question the magnitude of the PLN connection charge and ask for a downward revision, in keeping with Indonesian per capita income ranges.

#### Line Losses

Line losses represent the difference between power generated and power converted into revenue. To some extent self-consumption accounts for a minor fraction. More importantly, overloading of old equipment and meter inaccuracies have been major contributors.

The norms for new construction, according to an independent

expert we consulted, are 10 to 15 percent, provided the entire system is new. This compares with losses in the 40 to 70 percent range, for rural cooperatives, in the past. More recently, this has been reduced to 20 to 30 percent.

There exist a number of variables, each contributing about 2 to 3 percentage points. They are:

- Sizing of the transformers
- Substations
- Primary lines
- Secondary lines
- Meters

Another AID officer told us that line losses are typically the result of:

- Inferior hardware
- Bootlegged power

An experienced technician would be able to tell which of these is likely to be predominant.

The official PLN reports talked of line losses in the mid-twenty percent range. Normally, we would have urged a closer and more accurate determination of the real losses, because against a revenue base of about US\$ equivalent of 160 million for 1978, each percentage point is worth US\$1.6 million, and a 12 percent disagreement is therefore equal to over US\$19 million per year.

If we do not make a formal recommendation this is due to a concerted effort on the part of all donors to bring this important subject under better control. Segregating historical losses during the period 1970 through 1976 under three major categories one analyst compared actuals against attainable near-term targets, together with a 12-step remedial program. Some of the corrective actions will be implementable in the 1970's while others will require an additional five years.

<u>Category</u>	<u>Acceptable Range</u>	<u>Actual Range</u>
Generation Losses	2.17% to 2.91%	2.17% to 2.91%
Transmission Losses	3.50% to 6.00%	3.67% to 8.15%
Distribution Losses	5.00% to 7.00%	13.34% to 19.73%

The higher loss rate in distribution has been rationalized as being the result of preferential investment in generation and transmission, with less emphasis on distribution. According to the first expert, meter bypassing is a major factor in developing countries, but detection is definitely within the capability of the utility involved.

The twelve step loss reduction program includes one to address measures to prevent illegal use of electricity. It has no target completion date.

Because both AID loans preceded that by the other lender it appears as though AID's loss reduction efforts were not as catalytic as they could have been, although AID will now become a late co-beneficiary.

The illegal tapping prevention program does not have the same degree of specificity as some of the other technical loss avoidance efforts. Because it is within the state of the arts and because it has not been expressed as explicitly as some of the other loss prevention steps, and because of the magnitude of potential savings we believe that USAID/I should take a lead to encourage prompter and more controlled attempts to stop the line tappings.

#### Recommendation No. 8

USAID/Indonesia urge PLN to intensify its line tappings prevention program, and -- if necessary -- provide some specific technical assistance to do so.

#### Shipping Reports

Our review of the Engineering Consultants' contracts with PLN included an examination of shipping reports. The contracts require the Engineer to assist PLN in preparing the quarterly shipping reports required by the AID Loan Agreement.

While the Engineer had prepared the quarterly shipping reports for the two quarters beginning July 1, 1978 and ending December 31, 1978 he had not submitted them to either PLN or AID.

In assessing the accuracy of the reports we found a significant number of material discrepancies in both materials as well as freight costs.

The first shipments to be received in Indonesia under the Loan Agreements arrived in the second calendar year quarter of 1978. We found that up to the time of our audit 45 invoices had been received, but only 28 were included in the Contractor's shipping reports. Of the 28 the cost of materials on six were reported incorrectly while one reported incorrect freight cost (See Exhibit F). There were further discrepancies on transactions combining freight costs with material costs, particularly when compared with Bills of Lading.

The Engineer's shipping reports had been prepared by a former employee. Therefore we were unable to determine why the reports had not been forwarded voluntarily to PLN or AID. PLN had apparently overlooked the shipping report requirement and for that reason had not asked for them. The reason for AID's failure to follow up appears to be the lack of procedures designating responsibility for monitoring shipping reports. Recommendation No. 4, made in another context, was worded to encourage a fail-safe reporting mechanism for all loan covenants.

We were able to determine the cause for five of the errors in reporting materials costs: A clerk had confused material costs with freight costs, which were expressed in Indian Rupees on the Bill of Ladings.

Because shipping reports have neither been prepared accurately nor submitted promptly there exists a risk that the 50 percent U.S. shipping provision could be violated.

In discussing our proposed shipping report monitorship recommendations with the Mission the question of resource capability was raised once more.

While not disagreeing with the merits of the improved controls that would result from these recommendations, the pressures imposed by AID/Washington on the Mission to reduce (rather than to increase) detailed involvements, place it in a dilemma:

Which of two diagonally opposed philosophies and related mandates to respond to?

In the absence of any specific legislative relief to relax prudent management we are retaining our recommendations.

Recommendation No. 9

USAID/Indonesia remind PLN of its obligation to prepare an accurate shipping report covering the period from inception to date, reflecting material costs from contractors' invoices and freight costs from Bills of Lading. When actual freight costs are unavailable a reasonable estimate should be made and identified as such on the shipping report.

Recommendation No. 10

USAID/Indonesia assign specific responsibility for monitoring all shipping reports.

WRAP-UP

In its concluding comments the Mission attempted to convey to us that the GOI's interest in seeing an early completion of the project(s) exceeded that of USAID/Indonesia. The spokesperson added that there existed no historical precedent for GOI ever deserting a program involving a foreign/US donor, and that trade-offs between UNDERWORKING and OVERWORKING specific problems had to be considered extremely carefully, on a case-by-case basis.

The above report, and its specific recommendations, represent AAG/EA's best judgement as to what that degree of involvement ought to be.

EXHIBIT A

West Java Transmission Projects I and II  
FINANCIAL STATUS OF LOANS  
 At February 28, 1979  
 (US \$ Thousand)

<u>Loan No.</u>	<u>Signed</u>	<u>TDDA</u>	<u>TDD</u>	<u>DA</u>	<u>Expiration</u>	<u>L/C</u>	<u>Agreement</u>	<u>Committed</u>	<u>Disbursement</u>	<u>Pipeline</u>
-0215	-HO28	04/09/73	03/31/80	12/31/80			17,200			740
W. Java T&D (Phase I)										
L/Comm	02801	Charles T. Main	Engineering	12/31/80		12/31/78	3,845	2,434	63	1,411
	02	Irby Construction Co.	Steel/Accessories	06/30/80			2,547	2,107	83	440
	03	Southwire Company	Conductors	04/30/80			1,918	456	24	1,462
	04	Copperweld Industries Int'l	Shieldwire	04/30/80			286	254	89	32
	05	Irby Construction Co.	Equipment/Design	10/01/79			4,513	4,279	95	234
	06	Tension Stringing Equip. Inc.	Equipment	06/01/79			406		-	406
	07	Ohio Brass Co.	Lightning Arrestors	09/01/79			88		-	88
	08	General Electric Co.	Sub Station Equip	09/01/79			2,460	1,704	69	756
	09	Motorola, Inc.	Radio	12/31/79			397		-	397
							<u>17,200</u>	<u>16,460</u>	<u>68</u>	<u>5,966</u>
-232	-W-032	03/29/74	03/31/80	12/31/80			19,700			25
West Java T&D (PHASE II)										
L/Comm	03201	Charles T. Main Co.	Engineering	09/30/79		09/30/79	2,522	1,708	68	814
	02	Irby Construction Co.	Supply/Errection	12/31/80			8,135	4,382	54	3,753
	03	Irby Construction Co.	Equip./Design	10/01/79			4,996		-	4,996
	04	Ohio Brass Co.	Lightning Arrestors	09/01/79			88		-	88
	05	General Electric Co.	Sub Station Equip.	09/01/79			3,986	804	20	3,182
		REFUNDS					(52)	(52)	-	
							<u>19,700</u>	<u>19,675</u>	<u>35</u>	<u>12,858</u>

**EXHIBIT B**

**WEST JAVA TRANSMISSION - PROJECTS I AND II: PERSPECTIVE;**  
**EXTERNAL ASSISTANCE RECEIVED BY INDONESIA FOR THE POWER SECTOR**  
 (US \$ Million)

<u>Lending Institution/ Country</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>Total</u>
Australia	-	-	-	-	-	-	-	9.0	9.0
Belgium	-	-	-	-	3.8	4.7	4.8	4.5	17.8
Canada	-	-	-	-	-	12.5	-	4.1	16.6
Denmark	-	-	5.4	-	-	-	-	-	5.4
France	5.7	-	6.3	6.7	23.5	17.9	2.2	21.9	84.2
F.R. Germany	4.3	4.1	-	14.7	-	3.4	10.7	6.6	43.8
Japan	18.7	14.0	9.7	7.2	5.9	82.5	41.0	131.5	310.5
Netherlands	2.1	2.0	0.3	8.2	1.3	-	-	-	13.9
New Zealand	-	-	-	-	-	24.5	-	-	24.5
United Kingdom	0.5	-	7.6	2.2	2.9	2.8	-	-	16.0
U.S.A.	41.5	40.7	0.6	17.2	33.0	-	-	-	133.0
ADB	-	11.7	2.6	15.8	-	19.8	39.7	45.0	134.6
IDA/IBRD	-	-	40.0	48.5	-	41.0	206.6	-	336.1
SUB-TOTAL:	72.8	72.5	72.5	120.5	70.4	209.1	305.0	222.6	1,145.4
(IGGI Donors)									
Energoinvest (Yugoslavia)	-	-	-	-	80.0	-	-	-	80.0
Paribas (France)	-	-	-	-	-	128.8	-	-	128.8
Hill Samuel (U.K)	-	-	-	-	-	4.2	-	-	4.2
ABN (Netherlands)	-	-	-	-	-	96.8	-	-	96.8
U.S. Exim Bank	-	-	-	-	-	61.1	-	-	61.1
Bankers Trust Co. (U.S.A)	-	-	-	-	-	-	-	37.7	37.7
Japan Exim Bank (Japan)	-	-	-	-	-	-	-	38.5	38.5
BNP/Pera	-	-	-	-	-	-	-	15.3	15.3
Kuwait	-	-	-	-	-	-	-	30.0	30.0
Abu Dhabi	-	-	-	-	-	-	-	14.2	14.2
SUB-TOTAL:	-	-	-	-	80.0	290.9	-	135.7	506.6
(Others)									
GRAND TOTAL:	72.8	72.5	72.5	120.5	150.4	500.0	305.0	358.3	1,652.0

Source: LPN

West Java Transmission Projects I and II  
Fund Allocation Revisions, Commitments and Expenditures  
As of December 31, 1978  
(000 Omitted)

<u>Line Items</u>	<u>PHASE I (028)</u> <u>Allocation</u>		<u>PHASE II (032)</u> <u>Allocation</u>		<u>TOTAL</u> <u>Allocation</u>	
	<u>Previous</u>	<u>Revised</u>	<u>Previous</u>	<u>Revised</u>	<u>Previous</u>	<u>Revised</u>
<b>1</b> <u>150 KV Transmission</u>						
1A Tegal- Cirebon	\$ 2,814	\$ 1,675			\$ 2,814	\$ 1,675
1B Cirebon-Bandung	5,338	3,112			5,338	3,112
1A Bandung-Bogor			\$ 7,294	\$ 5,575	7,294	5,575
1B Bogor-Jakarta			2,837	2,481	2,837	2,481
Sub - Totals	\$ 8,152	\$ 4,787	\$ 10,131	\$ 8,056	\$ 18,283	\$12,843
KM	187	187	170	170	357	357
Cost per KM	\$ 44	\$ 26	\$ 60	\$ 47	\$ 51	\$ 36
<b>2.</b> <u>Substations</u>						
2A Tegal	\$ 664	\$ 452			\$ 664	\$ 452
2B Bandung-Ujung Berung	6,181	5,158			6,181	5,158
2C Bandung-Bandung Utara	3,829	-			3,829	-
2A Bandung-Bandung Utara			-	\$ 3,461	-	3,461
2B Bogor			\$ 5,805	5,582	5,805	5,582
Sub-Totals	\$10,674	\$ 5,610	\$ 5,805	\$ 9,043	\$ 16,479	\$14,653
3 Power Line Carrier	\$ 409	-	\$ 136	\$ -	\$ 545	-
4 Mobile Radio	139	\$ 396	139	-	278	396
5 Construction/Maintenance Eqipt.	1,458	1,847	486	-	1,944	1,847
6 Engineering Services	2,921	2,942	2,362	2,362	5,283	5,304
7 Training/Library	35	14	36	36	71	50
<b>TOTALS</b>	<b>\$23,788</b>	<b>\$15,596</b>	<b>\$19,095</b>	<b>\$19,497</b>	<b>\$42,833</b>	<b>\$35,093</b>
<b>Commitments</b>		<u><b>\$15,533</b></u>		<u><b>\$19,272</b></u>		<u><b>\$34,805</b></u>
% Commitments (of allocations)		99.6		98.8		99.2
<b>Expenditures</b>		<u><b>\$ 8,857</b></u>		<u><b>\$ 5,837</b></u>		<u><b>\$14,694</b></u>
% Expenditures (of allocations)		56.8		29.9		41.9

Source: Charles T. Main Quarterly Progress Reports

**EXHIBIT D**

**WEST JAVA TRANSMISSION PROJECTS I AND II**  
**PERUSAHAAN UDUM LISTRIK NEGARA (PLN)**  
**PAST AND PROJECTED INCOME STATEMENTS**  
**(Rp. Billions)**

	Actual			Projected								
	1974/75	1975/76	1976/77 (Un-audited)	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
Energy Generated (GWh)	3,345.0	3,770.0	4,127.0	4,979.0	5,820.0	7,060.0	8,560.0	10,370.0	12,560.0	15,110.0	18,010.0	21,440.0
Energy Sold (GWh)	2,444.0	2,804.0	3,089.0	3,781.0	4,420.0	5,400.0	6,590.0	8,040.0	9,790.0	11,860.0	14,230.0	16,940.0
Percentage Losses	26.9	25.6	25.2	24.1	24.1	23.5	23.0	22.5	22.1	21.5	21.0	21.0
Revenue/KWh Sold	16.4	21.7	27.1	27.2	31.3	36.0	40.3	44.4	48.8	53.7	59.1	63.8
Increase in Average Tariff(%)	47.7	32.3	24.9	-	15.0	15.0	12.0	10.0	10.0	10.0	10.0	8.0
<b>Operating Revenue</b>												
Electricity Sales	40.0	60.8	83.6	102.8	138.3	194.4	265.6	357.0	477.8	636.9	841.0	1,080.8
Other Income	.3	.6	.4	.8	.8	.9	1.0	1.1	1.2	1.3	1.4	1.5
<b>Total Revenue</b>	<b>40.3</b>	<b>61.4</b>	<b>84.0</b>	<b>103.6</b>	<b>139.1</b>	<b>195.3</b>	<b>266.6</b>	<b>358.1</b>	<b>479.0</b>	<b>638.2</b>	<b>842.4</b>	<b>1,082.3</b>
<b>Operating Expenses</b>												
Purchased Power	1.2	1.2	1.1	1.5	1.7	1.9	2.0	2.1	2.3	2.4	2.6	2.8
Fuel and Lubricants	7.9	13.5	21.7	30.0	39.4	58.4	77.0	103.2	139.9	186.1	246.4	307.3
Personnel Expenses	10.9	14.6	18.9	21.9	29.0	37.8	50.7	63.6	78.6	93.8	108.8	123.5
Material & Other Expenses	9.0	13.3	17.8	24.6	31.4	36.6	49.0	60.5	73.6	91.6	108.0	126.3
Depreciation	12.4	14.0	17.1	21.4	32.6	43.7	63.2	79.2	106.0	138.6	159.3	200.1
<b>Total Operating Expenses</b>	<b>41.4</b>	<b>56.6</b>	<b>76.6</b>	<b>99.4</b>	<b>134.1</b>	<b>178.3</b>	<b>241.9</b>	<b>308.6</b>	<b>400.4</b>	<b>512.5</b>	<b>625.1</b>	<b>760.0</b>
Income Taxes	-	-	-	-	-	-	3.5	10.5	17.1	31.7	66.4	105.2
<b>Operating Profit (Loss)</b>	<b>(1.1)</b>	<b>4.8</b>	<b>7.4</b>	<b>4.2</b>	<b>5.0</b>	<b>17.0</b>	<b>21.2</b>	<b>39.0</b>	<b>61.5</b>	<b>94.0</b>	<b>150.9</b>	<b>217.1</b>
<b>Other Income (Net)</b>	<b>(1.2)</b>	<b>(5.2)</b>	<b>(6.2)</b>	<b>(3.0)</b>	<b>(3.3)</b>	<b>(3.6)</b>	<b>(3.9)</b>	<b>(4.2)</b>	<b>(4.5)</b>	<b>(5.2)</b>	<b>(5.8)</b>	<b>(6.5)</b>
<b>Interest Payments</b>	-	-	-	(4.0)	(11.0)	(20.0)	(31.0)	(45.0)	(65.0)	(85.0)	(105.0)	(130.0)
<b>Less: Interest During Construction</b>	-	-	-	4.0	11.0	12.0	18.0	23.0	29.0	35.0	41.0	48.0
Interest Charges to Operations	-	-	-	-	-	(8.0)	(13.0)	(22.0)	(36.0)	(50.0)	(64.0)	(82.0)
<b>Adjustments</b>	<b>.1</b>	<b>(1.0)</b>	<b>(.2)</b>	<b>-</b>								

	Actual 1976/77			Projected								
	1974/75	1975/76	(Un-audited)	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/1984	1984/85	1985/86
Net Profit (Loss) Transferred to B/S	(2.2)	(1.4)	1.0	1.2	1.7	5.4	4.3	12.8	21.0	38.8	81.1	128.6
Operating Ratio (%)	103	92	91	96	96	91	91	86	84	80	74	70

Source of Basic Data: PLN, February 1978

West Java Transmission Project I and II  
**PERUSAHAAN UMUM LISTRICK NEGARA (PLN)**  
**PAST AND PROFORMA BALANCE SHEETS**  
 (Rp. Billions)

	Actual		1976/77	Proforma								
	1974/75	1975/76	(Un-audited)	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
<b>ASSETS</b>												
<b>CURRENT ASSETS</b>												
Cash	20.1	16.2	28.7	35.0	41.0	47.0	53.0	58.0	65.0	72.0	79.0	87.0
Accounts Receivable	11.5	14.9	20.6	23.0	29.0	38.0	50.0	67.0	88.0	115.0	148.0	189.0
Inventory	19.5	24.8	30.8	36.0	46.0	52.0	59.0	68.0	76.0	86.0	93.0	100.0
Other	7.3	12.9	17.2	25.0	29.0	34.0	38.0	43.0	84.0	54.0	60.0	71.0
Total Current Assets	58.4	68.8	97.3	119.0	145.0	171.0	200.0	236.0	277.0	327.0	380.0	447.0
<b>OTHER INVESTMENTS</b>	.6	.1	.1	-	-	-	-	-	-	-	-	-
<b>FIXED ASSETS</b>												
Gross Fixed Assets	198.9	229.0	305.6	442.1	643.1	945.7	1352.1	1817.1	2417.1	3127.2	3955.0	4938.3
Less: Depreciation	(47.0)	(61.0)	(78.1)	(99.5)	(132.1)	(175.8)	(239.0)	(318.2)	(424.2)	(562.8)	(722.1)	(922.2)
Net Fixed Assets												
in Operation	151.9	168.0	227.5	342.6	511.0	769.9	1113.1	1498.9	1992.9	2564.4	3232.9	4016.1
Work-in Process	117.4	273.9	358.3	458.1	583.8	759.8	937.8	1192.1	1481.1	1693.0	1941.3	2318.7
Total Fixed Assets	269.4	441.9	585.8	800.7	1094.8	1529.7	2050.9	2691.0	3474.0	4257.4	5174.2	6334.8
<b>TOTAL ASSETS</b>	<b>328.3</b>	<b>510.8</b>	<b>683.2</b>	<b>919.7</b>	<b>1239.8</b>	<b>1700.7</b>	<b>2250.9</b>	<b>2927.0</b>	<b>3751.0</b>	<b>4584.4</b>	<b>5554.2</b>	<b>6781.8</b>
<b>LIABILITIES AND EQUITY</b>												
<b>CURRENT LIABILITIES</b>												
	3.8	3.3	1.3	18.0	23.0	28.0	35.0	45.0	54.0	64.0	72.0	94.0
<b>LONG-TERM DEBT</b>	-	1.1	12.5	77.5	157.5	277.5	417.5	588.5	789.5	1030.5	1296.5	1629.5
<b>OTHER DEFERRED LIABILITIES</b>	.1	-	1.0	.9	1.0	1.1	4.6	15.1	32.2	63.9	130.3	235.5
<b>EQUITY</b>												
Government Contributions	309.5	475.5	617.1	744.6	944.1	1224.7	1559.6	1962.5	2458.8	2883.4	3344.3	3907.3
Consumer Contributions	23.5	40.9	60.3	86.5	120.3	170.1	230.6	299.5	379.1	466.4	553.8	629.6
Retained Earnings	(8.6)	(10.0)	(9.0)	(7.8)	(6.1)	(4.7)	3.6	16.4	37.4	76.2	157.3	285.9
Total Equity	324.4	506.4	668.4	823.3	1058.3	1394.1	1793.8	2278.4	2875.3	3426.0	4055.4	4822.8

	Actual		1976/77	Proforma								
	1974/75	1975/76	(Un audited)	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
<u>TOTAL LIABILITIES AND EQUITY</u>	<u>328.3</u>	<u>510.8</u>	<u>683.2</u>	<u>919.7</u>	<u>1239.8</u>	<u>1700.7</u>	<u>2250.9</u>	<u>2927.0</u>	<u>3751.0</u>	<u>4584.4</u>	<u>5554.2</u>	<u>6781.8</u>
DEBT/EQUITY RATIO	0/100 54.6	0/100 65.5	2/98 96.0	8/92 101.0	13/87 122.0	16/84 143.0	19/81 165.0	21/79 191.0	22/78 223.0	23/77 263.0	24/76 308.0	25/75 353.0

Source OF BASIC DATA: PLN, February 1978

**WEST JAVA TRANSMISSION PROJECTS I AND II**  
**Shipping Report Inaccuracies**

	<u>Invoice</u>	<u>AMOUNT PER</u>		<u>Shipping Reports Over (Under)</u>
		<u>Shipping Report</u>	<u>Invoice</u>	
<b><u>Material Costs</u></b>				
West Java I	T-4	\$ 278,928	\$ 539,666	\$ (260,738)
	T-6	212,337	19,655	192,682
	T-7	129,558	306,919	(177,361)
	T-8	398,487	949,551	(551,064)
Sub-Total		<u>\$1,019,310</u>	<u>\$1,815,791</u>	<u>\$ (796,481)</u>
West Java II	T-6	\$ 212,337	\$ 474,432	\$ (262,095)
	T-7	42,345	134,242	( 91,897)
Sub-Total		<u>\$ 254,682</u>	<u>\$ 608,674</u>	<u>\$ (353,992)</u>
TOTALS		<u>\$ 1,273,992</u>	<u>\$2,424,465</u>	<u>\$ (1,150,473)</u>
<b><u>Freight Costs</u></b>				
TOTALS	0336	\$ 6,541	\$ 34,730	\$ ( 28,189)
	273	52,536	179,500	( 126,964)
TOTALS		<u>\$ 59,077</u>	<u>\$ 214,230</u>	<u>\$ ( 155,153)</u>
West Java II	T-5	\$ 2,142	3,580	\$ ( 1,438)
Total Differences Noted		<u>\$1,335,211</u>	<u>\$2,642,275</u>	<u>\$ (1,307,064)</u>
Percentages		<u>51</u>	<u>100</u>	<u>(49)</u>

**Conclusion:**

Shipping Reports, for nine transactions listed above, included barely half of the material or freight cost involved.

## LIST OF RECOMMENDATIONS

### Recommendation No. 1

USAID/Indonesia study CTM's material expediting methodology and extend it to all other materials-intensive projects in Indonesia.

### Recommendation No. 2

USAID/Indonesia, notwithstanding an imbalance of available project managers to the Mission-wide project portfolio, involve itself at that level of management, at such frequencies, as to bring about the removal of the Rights-of-Way issue as an impediment to on-time project completion.

### Recommendation No. 3

USAID/Indonesia follow up vigorously its understanding of PLN's willingness to initiate an audit of the Engineering Consultant Contract's direct costs. Minimally, this should include a timeframe for starting and completing such an audit.

### Recommendation No. 4

USAID/Indonesia produce a Master Check List of all documents and periodic reports which are a mandatory requirement under the two loan agreements, and introduce and maintain the necessary disciplines related to their timely submissions.

### Recommendation No. 5

USAID/Indonesia, in conjunction with Capital Development in AID/W, insert a covenant into all future loan agreements putting ceilings on all accounts receivable balances, when measured against current sales that correspond with prevailing industry practices.

### Recommendation No. 6

USAID/Indonesia raise the question of conforming all future loan agreements to a format generally being followed by all other IGGI members, with AID/Washington, particularly with respect to insisting on certain basic financial disciplines.

Recommendation No. 7

USAID/Indonesia question the magnitude of the PLN connection charge and ask for a downward revision, in keeping with Indonesian per capita income ranges.

Recommendation No. 8

USAID/Indonesia urge PLN to intensify its line tappings prevention program, and -- if necessary -- provide some specific technical assistance to do so.

Recommendation No. 9

USAID/Indonesia remind PLN of its obligation to prepare an accurate shipping report covering the period from inception to date, reflecting material costs from contractors' invoices and freight costs from Bills of Lading. When actual freight costs are unavailable a reasonable estimate should be made and identified as such on the shipping report.

Recommendation No. 10

USAID/Indonesia assign specific responsibility for monitoring all shipping reports.

## REPORT RECIPIENTS

### USAID/Indonesia

Director 5

### AID/W

Deputy Administrator (A/AID) 1

#### Bureau for Asia:

Assistant Administrator (AA/A) 1

Deputy Assistant (Audit Liaison Officer) 1

Office of Indonesia and South  
Pacific/Asean Affairs (ASIA/ISPA) 1

#### Bureau for Development Support

Office of Development Information and  
Utilization (DS/DIU) 4

#### Office of the Auditor General:

Auditor General (AG) 1

Executive Management Staff (AG/EMS) 12

Policy, Plans & Programs (AG/PPP) 1

Office of Legislative Affairs 1

Office of Financial Management (OFM) 1

#### Area Auditor General:

AAG/Africa (East) 1

AAG/Africa (West) 1

AAG/Egypt 1

AAG/Latin America 1

AAG/Near East 1

### OTHER

Auditor General, Inspections and Investigations  
Staff (AG/IIS/Manila) 1