

THE REPUBLIC OF UGANDA

QUESTIONNAIRE
ON
THE PROJECT
FOR
THE REINFORCEMENT OF ELECTRIC POWER DISTRIBUTION NETWORK
IN
KAMPARA

OCTOBER, 1990

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

(注) -- ; 回答無し

質 問 事 項	回答及びREFER.No
<p>1. <u>BACKGROUND INFORMATION</u></p> <p>(1)Economic Indices</p> <p>a.GNP(GDP)</p> <p>b.Population by Age</p> <p>c.Agricultural Product, Industrial Manufacturing, Mining and etc.</p> <p>d.Area and Map(both countrywide and Kampala area)</p>	<p>ANNEX 1-1</p>
<p>(2)Climatic Condition at Kampala</p> <p>a.Rainfall</p> <p>b.Temperature</p> <p>c.Relative Humidity</p> <p>d.Wind Velocity</p> <p>e.IKL(Isokerannic Level), Thunders</p> <p>f.Earthquake</p> <p>g.Altitude(above sea level)</p>	<p>ANNEX 1-2</p> <p>西部地溝帯で1965 年に、マグニチュード 7.5の地震が発生し た。 カンパラ市の海拔は約 1,100~1,200m</p>
<p>(3)Organization of Uganda Electricity Board(UEB)</p> <p>a.Organization</p> <p>b.Head Office</p> <p>c.Local Office</p> <p>d.No. of Employees</p> <p>e.No. of Engineers</p> <p>f.No. of Technicians</p>	<p>ANNEX 1-3-1</p> <p>ANNEX 1-3-2</p> <p>ANNEX 1-3-3</p>

質 問 事 項	回答及びREFER.No
g.Existing Condition of Labor Force for Construction and Maintenance Work in UEB	機械、電機、通信の3つのメンテナンス・ショッポップを持ち、設備修理を行っている。
(4)Electrical Power Demand a. Annual Energy sold b. Annual Energy generated c. Peak Demand d. Electrification Ratio	<div> <div>ANNEX 1-4-1</div> <div>ANNEX 1-4-2</div> <div>ANNEX 1-4-3</div> </div> カンパラ市 ; 約 35 % 全国平均 ; 約 3 %
(5)Power Plant of UEB in Uganda a. Type b. Capacity c. No. of Unit	<div> <div>ANNEX 1-5</div> </div>
(6)Transmission Line a. Transmission System Diagram in Uganda b. Load-flow Diagram c. Voltage of Each Line d. Circuit Length	<div> <div>ANNEX 1-6-2</div> <div>ANNEX 1-6-3</div> <div>ANNEX 1-6-1</div> </div>
(7)Substation as Nationwide a. Transformer -Capacity -No. of Unit b. Condenser -Capacity -No. of Unit	<div> <div>ANNEX 1-6-3</div> <div>--</div> </div>

質 問 事 項	回答及びREFER.No
<p>(8)Distribution Line in Kampala and its Suburbs</p> <p>a.System Diagram and Voltage</p> <p>b.Circuit Length</p> <p>c.Transformer</p> <p>-Capacity</p> <p>-No. of Unit</p> <p>d.No. of Pole</p> <p>e.Size of Conductor</p>	<p>ANNEX 1-8</p> <p>— —</p> <p>合計容量;98.6MVA</p> <p>ユニット容量 ;</p> <p>Max.500KVA(3Ph.)</p> <p>Min. 25KVA(1Ph.)</p> <p>約 7 0 0 台</p> <p>カンパラ市内に</p> <p>約4,500本</p> <p>(約70m間隔)</p> <p>11KV</p> <p>架空用;Max.100mm²</p> <p>(ACSR)</p> <p>Min.25mm²</p> <p>地中用;</p> <p>標準70mm²-3C</p>
(9)Power Loss	— —
(10)Fault Records	— —
(11)Supply Voltage for Consumers	<p>高压需要家 ;</p> <p>11KV, 3Ph-3W</p> <p>低压需要家 ;</p> <p>415/240V, 3Ph-4W</p>
<p>(12)Dispatching Communication Network in Uganda</p> <p>a.Location of Station</p> <p>b.Transmission Method(e.g. Cable, Radio-wave, PLC)</p>	<p>ANNEX 1-12-1</p> <p>ANNEX 1-12-2</p>

質 問 事 項	回答及びREFER.No
<p>(13)Miscellaneous</p> <p>a.Tariff System of UEB</p> <p>b.Existing Condition of Roads in Kampala</p> <p>c.Annual Report of UEB</p> <p>d.Private owned Power Plants in Kampala and other Uganda Area</p>	<p>ANNEX 1-13-1</p> <p>--</p> <p>ANNEX 1-13-2</p> <p>ANNEX 1-13-3</p> <p>ローカル分離系統も 総てUEBが所有して いる。</p>
<p>2. <u>EXPECTED PROGRAM OF THE PROPOSED PROJECT</u></p> <p>(1)Reinforcement of Substation(S/S)</p> <p>a.S/S name of Subject</p> <p>b.Location</p> <p>c.Single-line Diagram of S/S in Existence</p> <p>d.Expected Portion for the Reinforcement</p>	<p>Lugogo, Mutundwe Queeens Way Motor Mart</p> <p>ANNEX 2-1-1</p> <p>ANNEX 1-6-3</p> <p>ANNEX 2-1-2</p>
<p>(2)Materials of Distribution Line</p> <p>a.Type(Overheaded or Underground)</p> <p>b.Expected Quantity</p> <p>c.Applied Location</p>	<p>} ANNEX 2-2</p> <p>カンパラ市内</p>
<p>(3)Dispatching Communication Machine</p> <p>a.Applied Location and Purpose</p> <p>b.Expected Communication Method</p> <p>c.Expected Specifications</p>	<p>--</p> <p>--</p> <p>--</p>

質 問 事 項	回答及びREFER.No
(4)Vehicle a.Purpose and Type b.Quantity	} ANNEX 2-4
(5)Road Lighting a.Lighting Location in Kampala b.Dimention of the Road	Kampala Road(1.5km) 車道 ; 対向 1 車線 歩道 ; 車道の両側
(6)Upper-level Project or Other Project being related to the Proposed project, if exist	ANNEX-2-6
3 . O T H E R S (1)Industrial Standard applied in Uganda, especially to Electrical and Mechanical Engineering	BS, IEC
(2)Government Organization for the RADIO-WAVE ADMINISTRATION	Grand Post Office

ANNEX 1-1 ECONOMIC INDICES

1. GDP per capita: 60,711 million Ushs (1989 Ug.shillings).
2. Population: 16.87 million pple, 48% of whom are children of 0 - 14 years of age. The population level is 7.2 children per family.
3. Agricultural product: 405,473 million Ushs (1989 Ug.shs).
Industrial Manufacturing: 561,106 million Ushs (1989).
Mining: 37 million Ushs (1989).

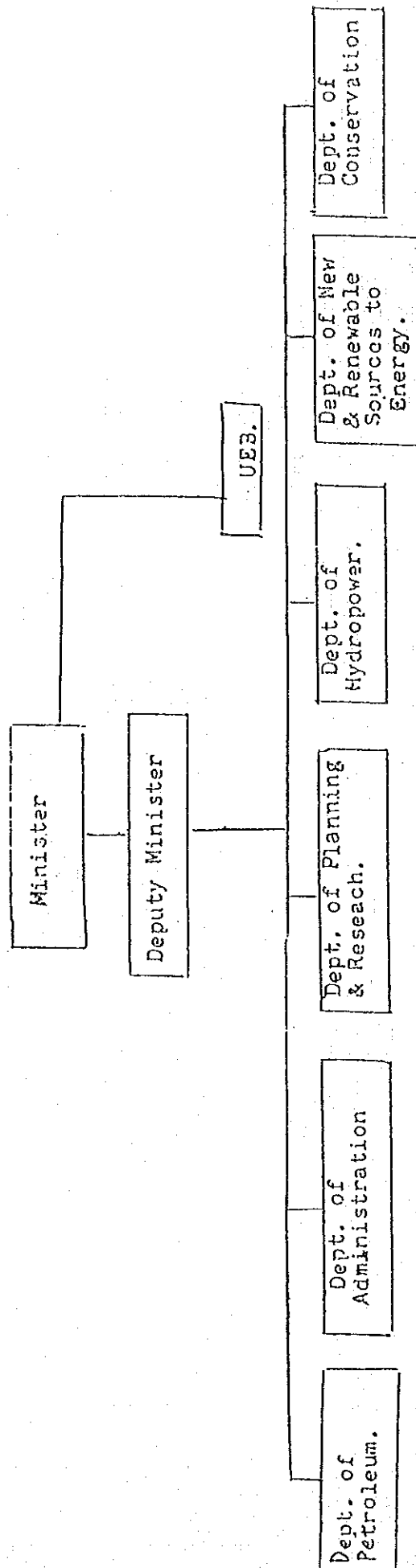
Details are given on following table.

<u>GDP at factor cost, at current prices (UShs m.)</u>				
INDUSTRY	1986	1987	1988	1989
Agriculture	13751	47669	136046	260744
Mining & Quarrying	24	34	35	37
Manufacturing	1655	6734	22630	40840
Electricity/Water	37	130	558	1059
Construction	378	2999	12918	27422
Retail/Wholesale	2830	18977	61829	122680
Transport/Communication	1413	5812	14700	39919
Community Services	3876	12226	33305	68005
TOTAL MONETARY	26964	94581	282021	561106
Agriculture	22204	74625	194006	405473
Construction	44	262	896	1788
Owner occupied dwellings	1432	4975	14509	27212
TOTAL NON-MONETARY	23680	79862	209411	434473
TOTAL GDP	50644	174443	491432	995579
GDP PER CAPITA (U.Shs)	3355	11245	30819	60711

4. Area: 236,036 Sq.Km, about 1/5 of which is covered by water.

ANNEX 1 - 2 CLIMATE

1. Annual rainfall is 125cm evenly distributed throughout the year in two wet season.
2. Mean annual temperature is 22 deg.C.
3. Annual humidity in KAMPALA is 20-60 %.
4. Max. wind velocity in KAMPAKA is 3.7miles/Hr.
5. Thunder occurred on 17 days in KAMPALA on August.

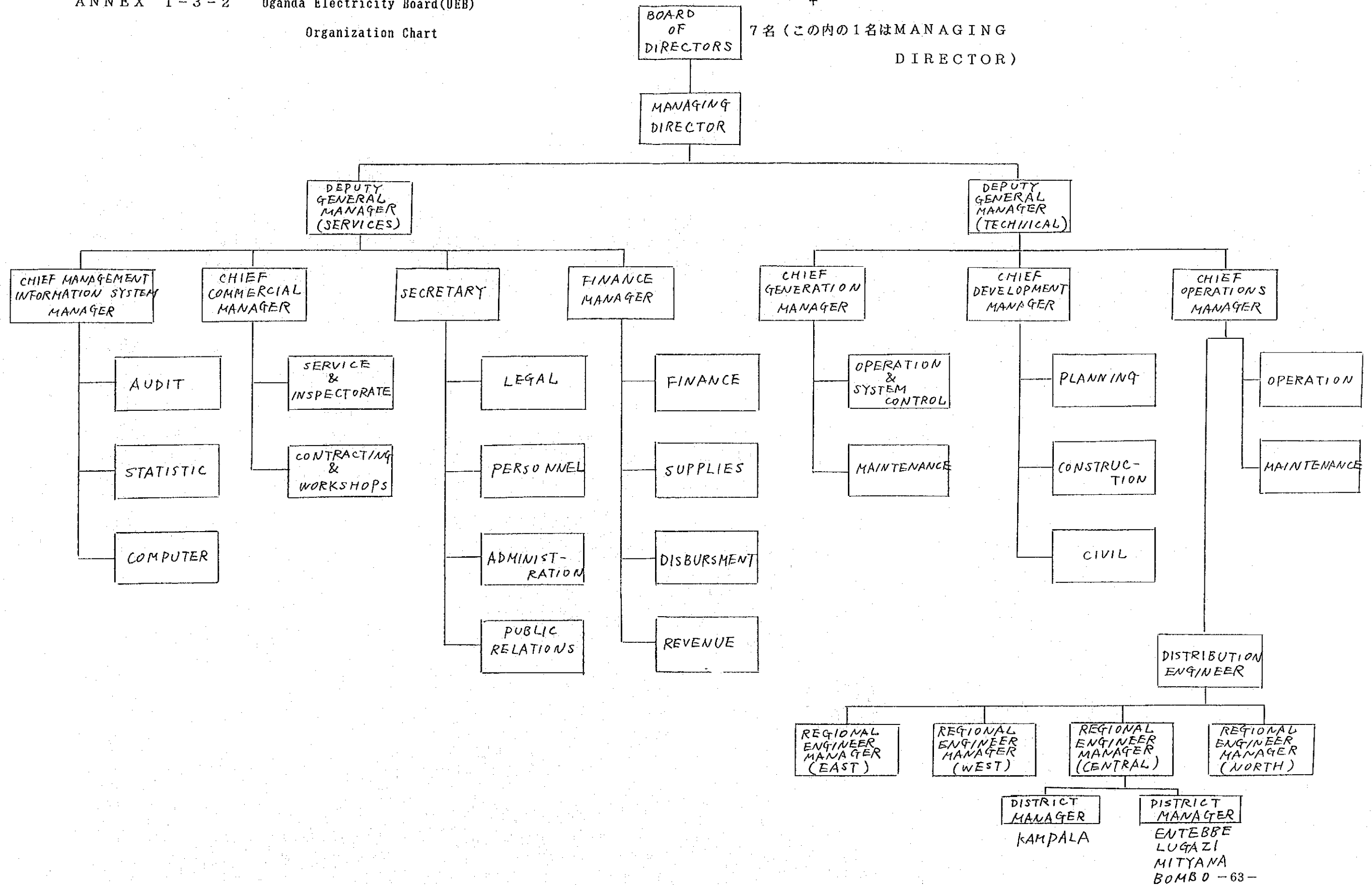


Organization Chart

Chairman

+

7名(この内の1名はMANAGING DIRECTOR)



ANNEX 1 - 3 - 3 UEB-STAFF RETURNS (JUNE 1990)

SECTION	SENIOR STAFF	INTER-MEDIATE	JUNIOR		TOTAL
		PERMANENT	PERMANENT	TEMPORARY	
OPERATION	65	297	1,070	73	1,505
GENERATION	18	69	115	43	245
DEVELOPMENT	13	53	158	63	287
FINANCE	21	62	68	8	159
SECRETARY	16	31	110	10	167
COMMERCIAL	13	48	23	-	84
TOTAL	146	560	1,544	197	2,447

UGANDA ELECTRICITY BOARD

ANNEX 1 - 4 - 1

DEMAND FORECAST BY CUSTOMER CATEGORY
GENERATION DEMAND AND BILLINGS ON UEB SYSTEM

CATEGORIES	1984	1985	1987	1988	1989
GENERATION (GWhs.o.)					

Hydro	612.4	624.8	609.9	569.9	659.7
Thermal	2.0	1.7	1.3	1.5	1.4
Total	614.4	626.5	611.2	571.4	661.1
Supply to Kenya 3/(GWhs.o.)	216.1	215.0	176.2	110.0	156.6

Supply to Uganda(GWhs.o.)	398.3	411.5	435.0	461.4	504.5

Billings in Uganda (GWh)					

Domestic	128.0	113.6	119.3	160.7	153.2
Hotels Clubs etc	16.3	7.2	19.0	9.4	7.4
General	20.3	16.1	70.6	70.6	29.2
Industrial:standard tariff	73.8	75.8	38.9	39.3	46.6
Commercial	33.9	22.2	68.3	30.9	39.0
Street lighting	9.5	9.2	11.0	8.7	4.0
Total	281.8	244.1	327.1	319.6	279.4

Uganda System Losses					
Unbilled Supply (GWhs .o.)	116.5	167.4	107.9	141.8	225.1
(% of Uganda supply)	29.2	40.7	24.8	30.7	44.6

Maximum Power Generated by UEB (MWs.o.)					

Coincident Maximum Demand of which to - Kenya	103.0	110.6	103.6	94.6	110.8
of which to - Uganda					
Maximum Uganda Demand	92.2	93.8	91.8	87.6	103.4

Annual System Load Factor on UEB System (%)					

- including Kenya supply	68.1	64.7	67.3	69.0	68.1
- Uganda demand only	49.3	50.1	54.1	60.1	55.7

Number of Connection on UEB System					

Hotels and Clubs	1,208.0	1,107.0	1,240.0	611.0	813.0
Residential	76,230.0	78,926.0	65,418.0	62,057.0	69,236.0
Commercial	6,732.0	5,816.0	-	-	-
Industrial	251.0	344.0	350.0	295.0	536.0
Street Lighting	-87.0	107.0	107.0	100.0	94.0
Security Lighting	22,289.0	20,149.0	25,609.0	17,731.0	18,123.0
Kenya Bulk Supply	1.0	1.0	1.0	1.0	1.0
Total	106,798.0	106,450.0	92,755.0	80,795.0	88,803.0

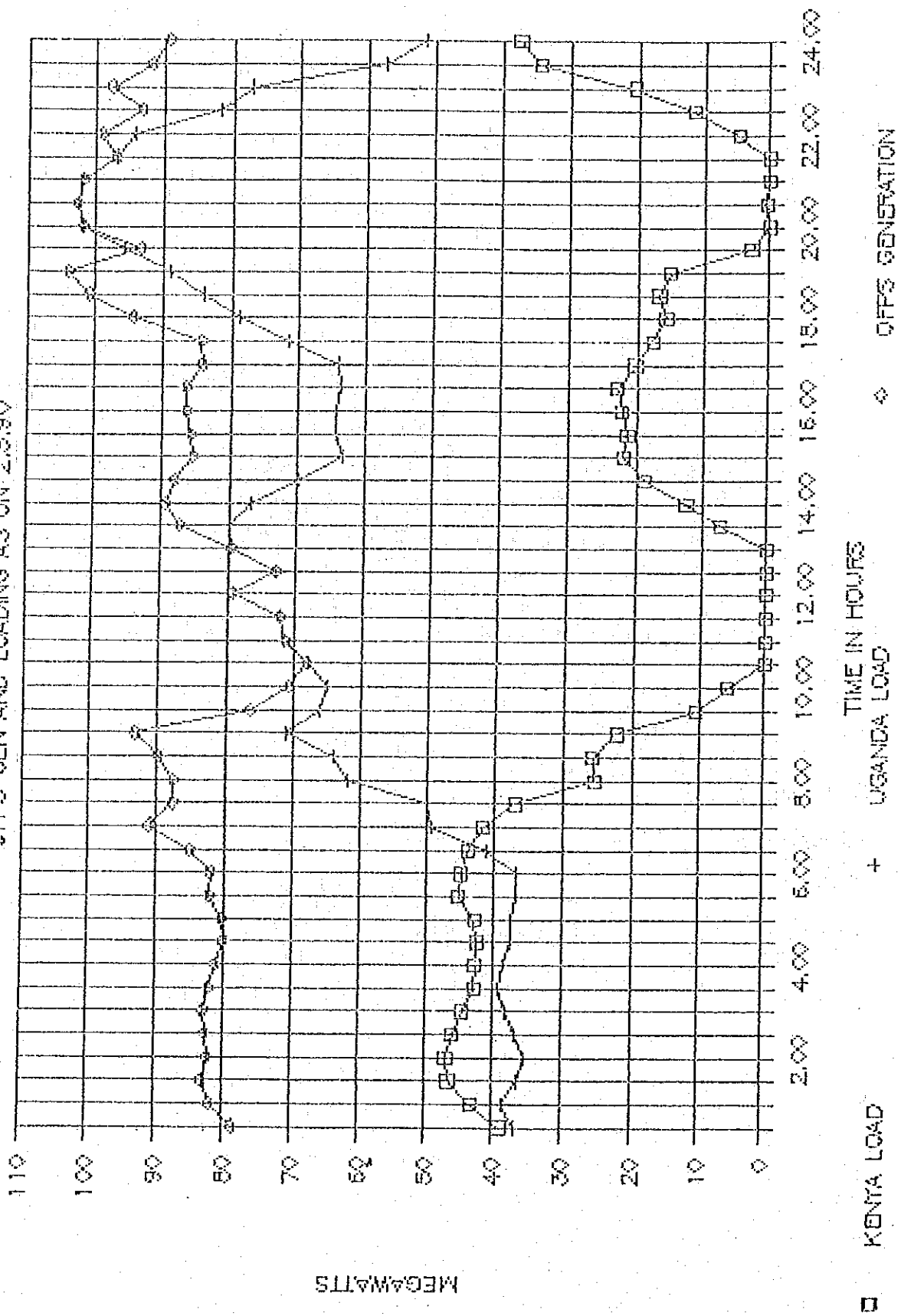
ANNEX 1 - 4 - 2

The summary of the load demand forecast for the Kampala city

CONSUMER GROUP	MAXIMUM DEMAND IN MVA			
	1988	1990	1995	2000
DOMESTIC	53.2	63	90	125
INDUSTRIES	10.7	11.6	15.5	21.4
INSTITUTIONS	15.8	16.3	24.0	26.6
STREET LIGHTING	2.7	3.2	4.5	6.3
TOTAL	82.4	94.1	134.0	179.3
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UGANDA ELECTRICITY BOARD

OFFS GEN AND LOADING AS ON 2.5.80



ANNEX 1 - 5

POWER PLANTS OF U.E.B. IN UGANDA

PLANT NAME	TYPE	CAPACITY INSTALLED IN MW	NUMBER OF UNITS
ARUA	DIESEL ENGINE	1.1	3
KABALE	DIESEL ENGINE	0.3	2
KABALE	HYDRO	DAMAGED	DAMAGED
KAPCHORWA	DIESEL ENGINE	0.25	2
KITGUM	DIESEL ENGINE	0.3	2
MOROTO	DIESEL ENGINE	0.5	2
MOYO	DIESEL ENGINE	0.2	2
NEBI	DIESEL ENGINE	0.14	1
RUKUNGIRI	DIESEL ENGINE	0.2	2
OWEN FALLS	HYDRO	150(UPDATING TO 180)	10
OWEN FALLS EXTENTION	HYDRO	UNDER DESIGN 102	3

ANNEX 1 - 6 - 1

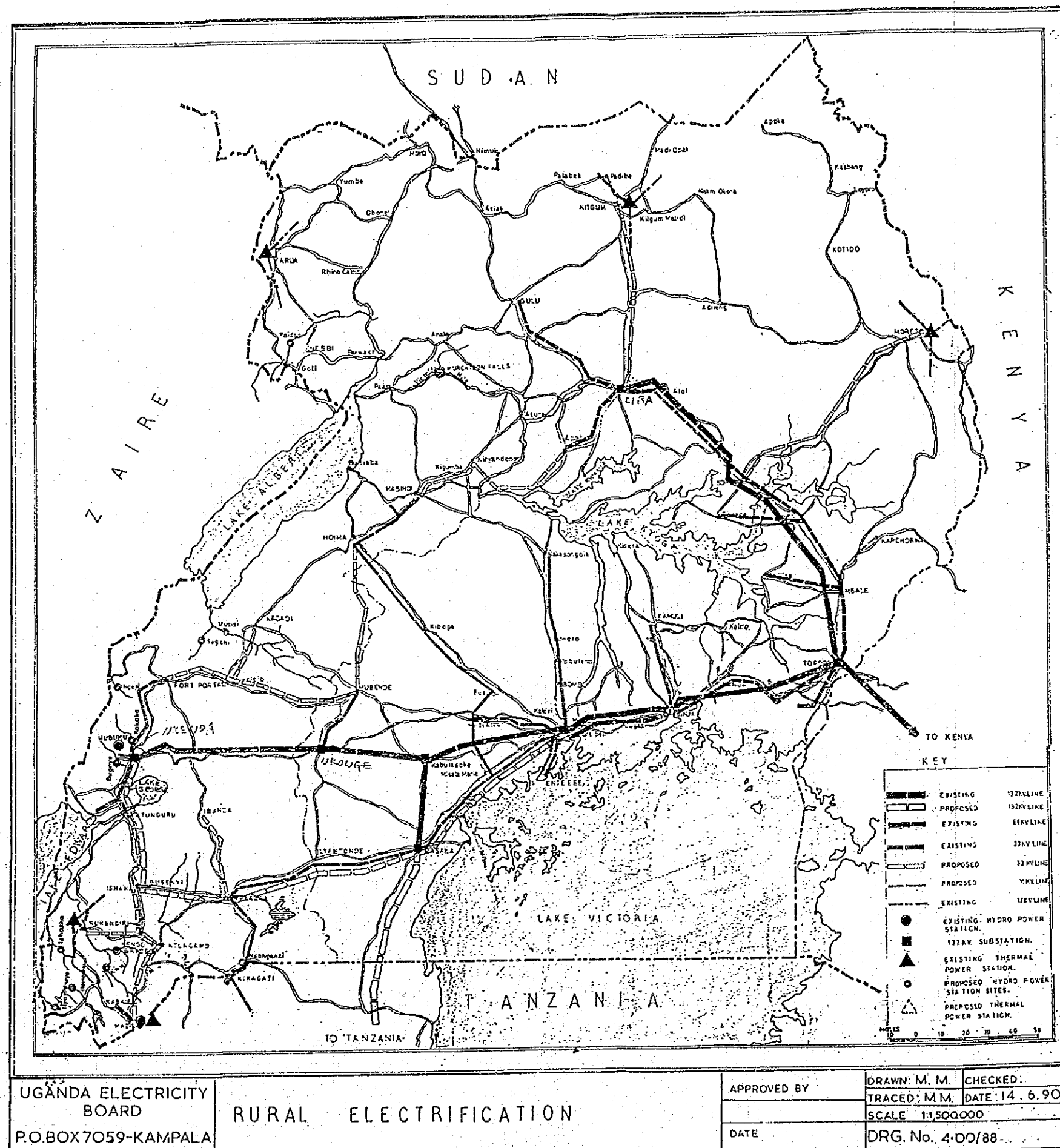
TABLES FOR TRANSMISSION & DISTRIBUTION LINE DISTANCES IN [km]

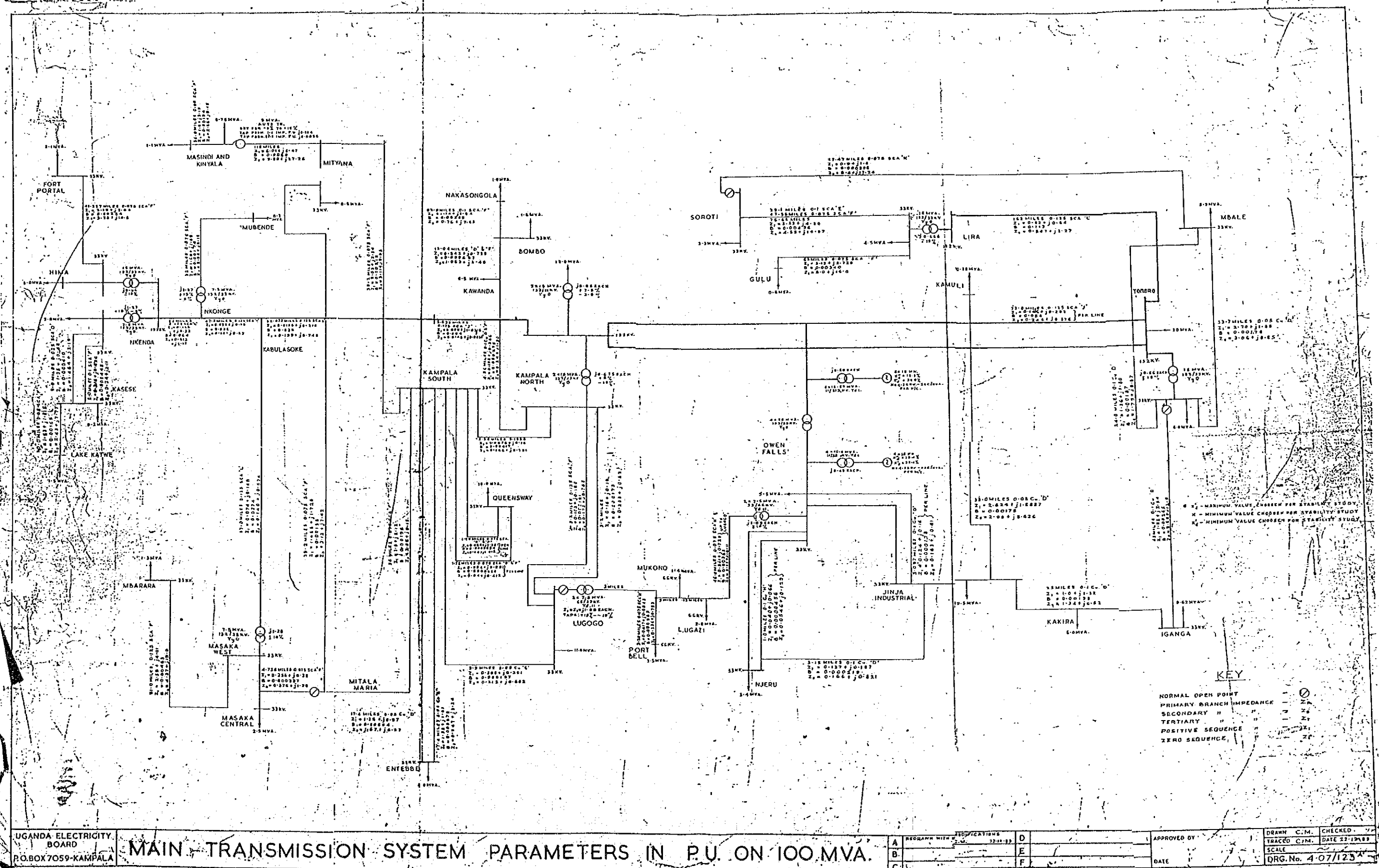
OVERHEAD

Year	132 kV	66 kV	33 kV	11kV	LV
1987	1009	80	2140	3844	2040
1988	1009	80	2220	3832	2083
1989	1009	80	2220	3899	2168
1990	1009	80	2220		
1991					

UNDERGROUND

Year	132 kV	66 kV	33 kV	11kV	LV
1987	-	-	-	83	148
1988	-	-	-	86	166
1989	-	-	-	92	200
1990	-	-	-		
1991					





KAMPALA

KEY

11 KV. POWER LINES
33 KV. POWER LINES
66 KV. POWER LINES
132 KV. POWER LINES
U. S. POWER STATIONS

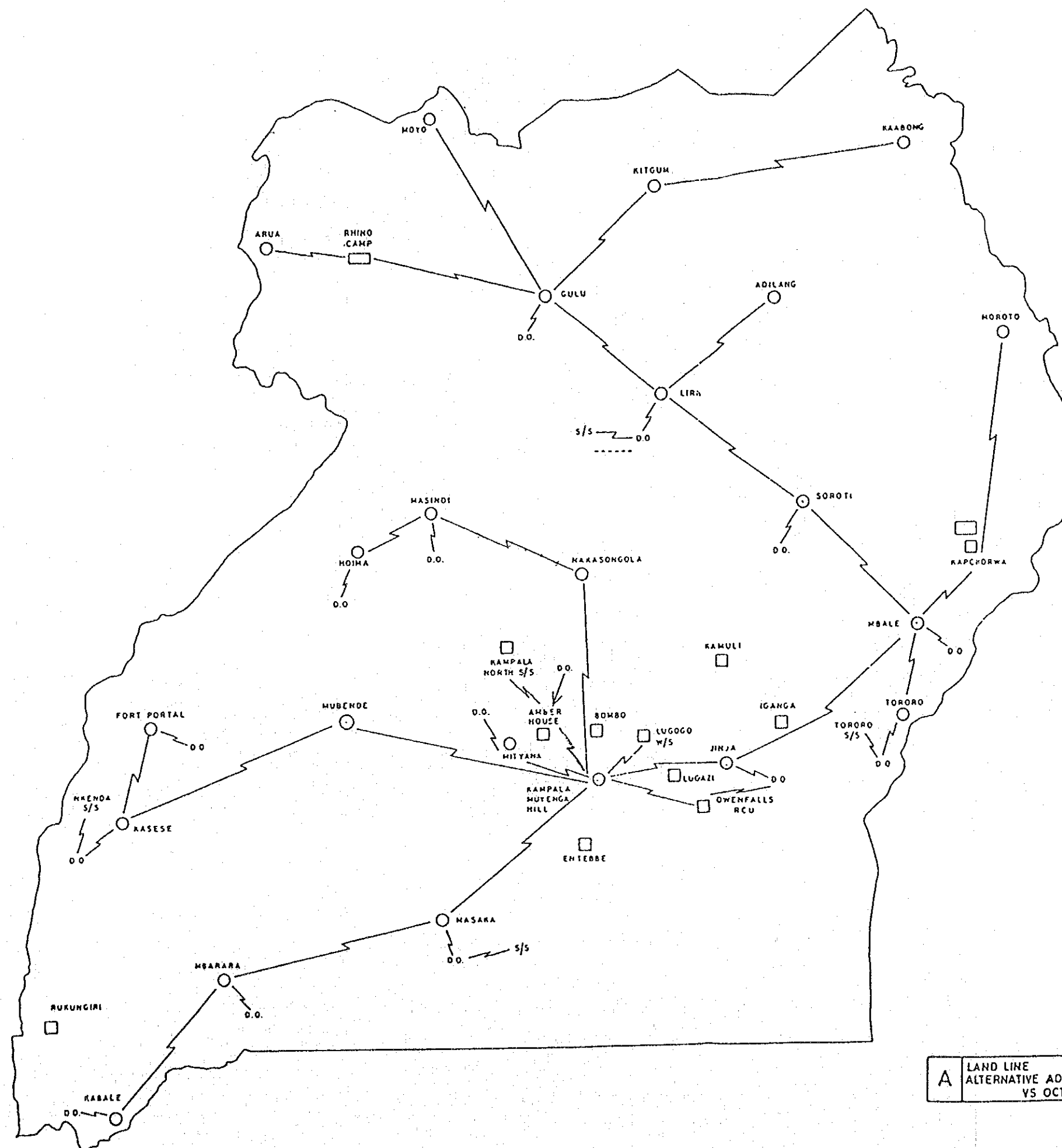
WORLD BANK GRANT.

JAPANESE GOVERNMENT GRANT

WORLD BANK AND JAPANESE
GOVERNMENT GRANT.

SCALE 1:25,000

3-236 Items in 1 vol. 1 vol. = 231 2 juv.



- KEY
- PROPOSED UHF REPEATER (ONLY).
 - VHF BASE STATION (HILLTOP)
 - FIXED VHF OUTSTATION.
 - UHF LINKS.
 - LAND LINE ALTERNATIVE
 - DC DISTRICT OFFICE

ANNEX 1-12-1

UGANDA ELECTRICITY BOARD			
VHF BASE STATIONS			
LOCAL AND INTERCONNECTING UHF LINK LOCATIONS (UPRATING)			
SCALE:- NTS		DATE:- DEC. '83	
DRAWN J.R.K.	TRACED	CHECKED R.C.G	
ORG.No.		3 UGA 104	
A LAND LINE ALTERNATIVE ADDED VS OCT '86		REV. A	

ANNEX 1-13-1 UGANDA ELECTRICITY BOARD

TARIFF CODES SUPERSEDING ONES DATED 1ST SEPTEMBER, 1988
FOR SUPPLIES OF ELECTRICITY IN UGANDA EFFECTIVE
1ST JANUARY, 1990

CODE 1. DOMESTIC TARIFF

Applies to supplies of electricity for domestic and other uses other than those under the following Code Numbers. 2, 3, 4, 5, and 6.

All Units 12.00 Shs. per Unit.

CODE 2. COMMERCIAL & SECURITY LIGHTING

All Low Voltage Supplies up to 50kVA at 240 or 415 Volts for Security Lighting, Maize Mills, Water Pumps, Small Scale Industries, Institutional Cooking etc.

All Units 11.00 Shs. per Unit.

CODE 3. INDUSTRIAL POWER TARIFF

All High Voltage Supplies above 500KVA for such Industries as Coffee Marketing Board, Nytil, Sugar Factories, Cable Factory, Breweries, Water Works, Sheraton Hotel, Nile Hotel/UICC etc.

(a) All KVA of M.D. per month or part of a month
.. .. 400.00 Shs. per KVA.

(b) Unit Charge:
All Units 7.00 Shs. per Unit.

CODE 4. GENERAL TARIFF

Low Voltage Supplies in excess of 50KVA up to 500KVA at 415 Volts for Industries, Office Buildings and Banks

(a) All KVA of M.D. per month or part of a month
.. .. 550.00 Shs. per KVA.

(b) Unit Charge: 7.00 Shs. per Unit.

CODE 5 HOTELS & CLUBS TARIFF

Supplies of electricity to Hotels & Clubs whose demand is less than 500kVA for general use.

All Units 12.00 Shs. per Unit.

CODE 6 STREET LIGHTING TARIFF

Supplies of electricity for purpose of Street Lighting in City, Towns and Trading Centres.

All Units 6.00 Shs. per Unit.

EXPLANATORY NOTES

A. DOMESTIC TARIFF:

1. Applies to all private dwellings and to supplies for all purposes except those under the following Code Numbers 2, 3, 5 and 6.

B. COMMERCIAL & SECURITY LIGHTING TARIFF:

1. Applies to all small scale enterprises such as small Maize Mills, small Water Pumps, small Soap Factories, Institutional Cooking etc. and separately metered security lighting with a minimum connected load of 2.5KW.

C. INDUSTRIAL POWER TARIFF:

1. The Industrial Power Tariff applies to supplies of electricity for ALL INDUSTRIAL PURPOSES (including Lighting) provided that the main use is for motive power or for an electrothermal process. They are not applicable to standby supplies taken mainly for lighting purposes.
2. The Industrial Power Tariffs normally apply to each point of supply.
3. The minimum MD is 500KVA per month in addition to associated power consumption.

D. GENERAL TARIFF:

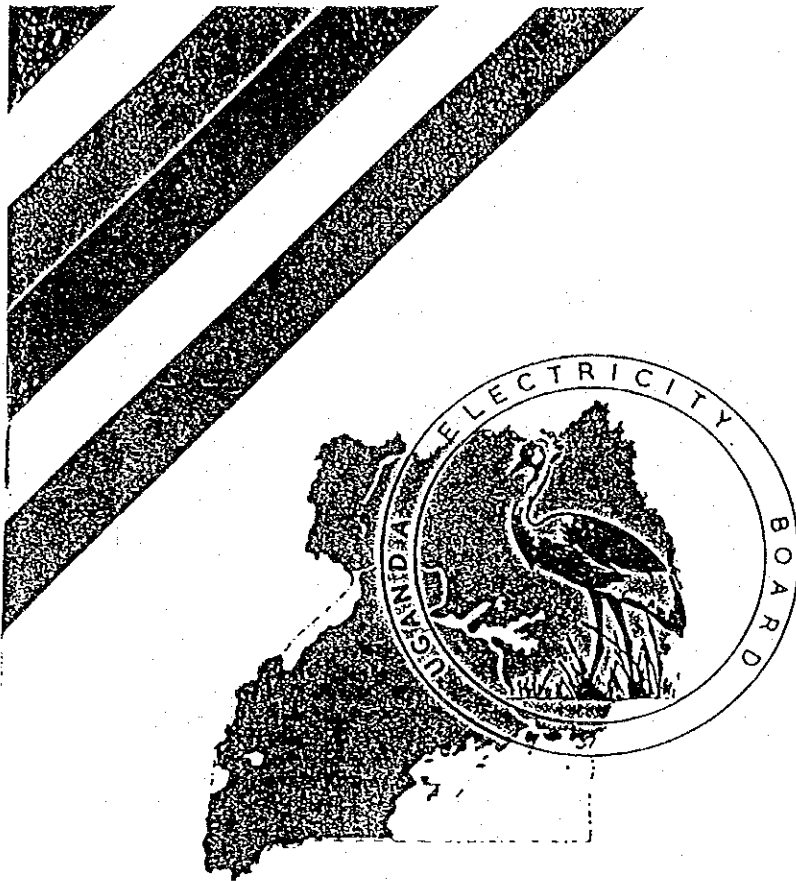
The minimum monthly MD is 50KVA in addition to associated power consumption .

E. GENERAL NOTES:

1. Consumers who wish to transfer from one available tariff to another must give notice in writing, and will normally be required to have taken the supply under their present tariff for at least twelve months before the transfer is made
2. The Board will provide, fix and maintain to the consumer such credit meter or meters as they consider necessary for ascertaining the value of the supply under all Tariff Codes.
3. The Board will not normally supply any apparatus on the Consumer's side of the metering equipment.
4. "MONTHLY MAXIMUM DEMAND" means the greatest number of Kilovolt-amperes supplied in any thirty consecutive minutes during the month of account.

P.T.O

ANNEX 1-13-2



1989
ANNUAL REPORT
AND
ACCOUNTS

U g a n d a E l e c t r i c i t y B o a r d

UGANDA ELECTRICITY BOARD

THE TWENTY-NINTH ANNUAL REPORT

AND ACCOUNTS

FOR THE YEARS ENDED

31ST DECEMBER, 1989

MEMBERSHIP OF THE BOARD

1986

1. Mr. H.W. Povey, Chairman, C.B.E., F.C.A.
2. Mr. A.K.A. Lugangira, A.M.I.M.
3. Mr. D.K. Bajanja
4. Mr. P. Semwezi, B.Sc.

1987

1. Eng. A.P.N. Waligo, Chairman, B.Sc., D.I.G., C.Eng., F.I.E.E. (U.K.), F.E.A.E., M.Sc.E.
2. Dr. S.E. Kiggundu
3. Dr. G. Olico Okwi
4. Dr. E.T.S. Adriko, B.Sc. (Eng.), Mech. Eng., Ph.D., Reg.Eng. (U)
5. Prof. W.W. Anakbongo
6. Mr. Urban Kizito
7. Mr. Alex Waibale

The 1987 Board's two-year term ended at the end of June, 1989, and a new one is yet to be instituted.

MANAGEMENT OF THE BOARD 1989/90

CHIEF OFFICERS

1. MANAGING DIRECTOR
A.R. RUTTA, B.Sc.(Eng.), M.I.E.E.E., M.I.E.E.
2. BOARD SECRETARY
H.N. BYAKIKA, B.A., M.A., DIP. ED.
3. FINANCE MANAGER
H.E. LWETABE, B.COM, M.B.F., DIP. Fin. Management.
4. CHIEF ACCOUNTANT, Ag.
C.M. EYAHURA, B.Com.
5. CHIEF OPERATIONS MANAGER, Ag.
E.S.N. BWANIKA, B.Sc.(Elec.) C.Eng., M.I.E.E., M.U.I.P.E.,
Reg. Eng. (U).
6. CHIEF GENERATION MANAGER, Ag.
A.E.M. MUGOYA, B.Sc. (Elec.)
7. CHIEF DEVELOPMENT MANAGER, Ag.
S.G. D'UJANGA, BSc. (Elec.), M.Sc., M.I.E.E.E., Reg. Eng. (U)
8. CHIEF COMMERCIAL MANAGER, Ag.
G.S. KAGOLOBYA, B.Sc. (Elec.)
9. CHIEF COMPUTER MANAGER, Ag.
J.B. NAMPENGE, B.Sc., D.H.P.,

On 31st May, 1989, Mr. J.L. Mukasa, F.C.I.S., retired as Chief Accountant after serving the Board for 33 years. He was succeeded by Mr. Chris Eyahura as Chief Accountant and Mr. Henry Lwetabe as Finance Manager.

1989 saw the return to the service of the Board, Mr. A.R. Rutta, as Managing Director. He had been an employee of the Board as Development Engineer between 1969 to 1980 when he left the country.

UEB POWER TWO REHABILITATION PROJECT

1. Chairman, Rehabilitation Monitoring Committee
A.K.A, LUGANGIRA, M.I.I.M., M.B.I.M.
2. Transmission & Distribution:
 - (a) Project Co-Ordinator
Y.B.K. MPAGI, B.SC., M.I.E.E., M.I.E.E.E.
 - (b) Consulting Engineer
LAHMEHER INTERNATIONAL
3. Generation:
 - (a) Project Co-ordinator
A.E.M. MUGOYA, B.Sc. (Elec.)
 - (b) Consulting Engineers
KENNEDY & DONKIN POWER SYSTEMS LTD.
4. Project Accountant:
M.M. SEMPEBWA, B.Com.

N.B. Mr. A.K.K. Lugangira retired from the services of the Board at the end of November, 1988, as Deputy General Manager, and was re-engaged as Chairman of the Rehabilitation Monitoring Committee in January, 1989.

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10. Auditors Reports
11. Notes on Accounts
12. Statistics
13. 1986 & 1987 Budgets

AMBER HOUSE,
KAMPALA.

10th July, 1990.

The Hon, Richard Kaijuka,
Minister of Energy,
KAMPALA.

Dear Sir,

UEB ANNUAL REPORT & ACCOUNTS.

I have great honour to submit to you the Board's twenty-ninth Annual Report and Accounts, being its Report on the years ended 31st December, 1988 and 1989, in accordance with the provisions of Sec. 16(3) of the Electricity Act, 1964 together with the Accounts for the same periods audited as required by the said Sec. 16(1) of the Act.

I wish to reiterate, Sir, that this Report combines two accounting periods - 1988 and 1989. This was found convenient for us as we had the delayed accounts of those years audited about the same time. This, therefore, renders me apologetic, Sir, for the late submission of the Annual Report and Accounts; the reasons were beyond our control, including a technical computer break-down for over one and a half years.

Further, I would like to remark that UEB has not been able to produce this document since 1975. This is the first one in one and a half decades. We promise to maintain its annual production.

Yours very faithfully,

A.R. RUTTA,
MANAGING DIRECTOR.

I N T R O D U C T I O N

This is the Board's Twenty-ninth Annual Report and Accounts, relating to the years ended 31st December, 1989, and also the first in a decade and a half. The audited Accounts covering the Board's operations for these two financial periods are set out on Pages

The Board is a statutory authority established by the Act of Parliament, 1961 amended in 1964 (ap, 16) as a body corporate with the cardinal function to generate, transmit and distribute electric energy to all areas in Uganda. The bulk of the Ugandan rural community has yet to be linked to the main national grid emanating from the Owen Falls Power Station at Jinja. There is need to explore avenues of assistance in this regard as only about one million people are enjoying electricity services out of a population of 14 million.

The same Act gives the Board its powers and responsibilities to pursue its financial objectives and procedures in order to fulfil its functions.

UGANDA ELECTRICITY BOARD

1989 ANNUAL REPORT

MANAGEMENT INFORMATION SERVICES

- (a) Following the study entitled Assessment of Management, Organisation, Manpower and Consultancy and Training Requirements of UEB, July, 1987 the restructuring of UEB carried out in 1987 - 1988 gave rise to the Management Information Services Department.
- (b) The Management Information Services Department was envisaged to constitute an Internal Audit, Statistics and the Computer Sections. Currently, the Computer Section is the nucleus of the Management Information Services Department.
- (c) In October, 1971, an ICL 1902A Computer was installed and by 1984, it had served out its useful life. 1985 - 1987, the Board bought computer-time from ICL and Uganda Posts & Telecommunication Corporation to process the critical tasks of preparing billing and the payroll.
- (d) In October, 1987, with the assistance of a World Bank loan, the Board was able to procure a Wang Mainframe VS75E - 2DM with 145MB Core Store and eight personal computers.

The major part of the consignment was installed by September, 1988, and by end - 1989, 98% of the equipment was installed and running. However, a few critical items are causing the Board concern either because of late delivery or malfunctioning on installation and lack of contracted-for training.

- (e) With a stabilised computer system, the Board hopes to provide direct inquiry services to its consumers in 1990; and by 1991, the task of setting up Databases should be complete.
- (f) Management Information Service has carried out successful in-house courses on secretarial applications and conducted courses on popular applications like Lotus and introduced data-Base to some staff.

SERETARIAT:

1. STAFFING:

	<u>1988</u>	<u>1989</u>
Chief Officers	9	9
Senior Staff	133	143
Intermediate Staff	657	544
Junior Staff	1,502	1,410
Temporary (Daily Rate)	<u>240</u>	<u>372</u>
TOTAL:	2,541	2,478
	=====	=====

2. Several vacancies exist but future staffing is not expected to exceed 2,639 on permanent establishment,

INDUSTRIAL RELATIONS 1988 - 1989

1. SALARY REVISIONS:

- (a) On 1.9.88 - Salaries and Wages were increased by 250% after the Board and Union negotiations.
- (b) On 1.9.89 salaries and wages were increased by 70% after the Board and Union negotiations.

2. RETIREMENTS:

Forced and voluntary retirements

- (a) In 198839
- (b) In 198932

3. RECRUITMENTS 1988 - 1989

(a) Graduate Engineers	15
(b) Technicians	Nil (included in C)
(c) Artisans	73
(d) Porters	216
(e) Trainees	38

TRAINING:

A training programme for the period up to 1993/4 has been drawn up with the objective of developing the individual as a means of enhancing the performance of the Board. In the past, training has been concentrated on the engineering/technical side of UEB but the new programme will spread opportunities for enhancement across the Board.

An arrangement with British Electric International (B.E.I.) enabled two instructors, one for overhead lines and one for underground cables, to spend three months training and instructing Linesmen and Jointers.

Also in an effort to improve UEB's security operations, the Board has this year had 20 men trained at the National Police Training School, Kibuli.

TRAINING OVERSEAS ON ODA AWARDS.

	1988/89	1989/90
Administrators	2	1
Accountants	1	1
Engineers	3	2
Technicians	1	8

In addition to the ODA awards, the Board will be benefiting from about 20 British Council Scholarship awards for 1990/91.

GENERATION:

GENERATION DEPARTMENT REPORT - 1989.

1. Units generated in the past five years:-

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>
HYDRO	616.9	624.7	635.5	618.1	566.0	659.5
DIESEL	<u>0.358</u>	<u>0.890</u>	<u>0.564</u>	<u>0.082</u>	<u>0.161</u>	<u>1.133</u>
TOTAL	617.3	625.5	636.0	618.2	566.2	660.633

2. SYSTEM DEMAND:

The maximum demand for the inter-connected system, including exports of 441.1 GWh to Kenya, was 110.8MW and, with a total of 659.5 million units generated. The system annual load factor was 67.9% (68.1% in 1988).

3. Generation during the year at each station:

	<u>1989</u>		<u>1988</u>	
	Units GWh	Max. Demand (MW)	Units GWh	Max. Demand (MW)
Owen Falls	659,471	110.80	566.0	94.6
Kabale	0.784	0.540	0.161	N/A
Arua	0.073	0.280	NIL	-
Moroto	0.004	0.190	NIL	-
Rukungiri	0.246	0.265	NIL	-
Kitgum	0.027	0.110	NIL	-
Kapchorwa	N/A / <u>a</u>	N/A / <u>a</u>	NIL	-
Moyo	N/A / <u>a</u>	N/A / <u>a</u>	NIL	-
Koboko	NIL / <u>b</u>	NIL / <u>b</u>	NIL	-
Adjumani	<u>NIL /<u>b</u></u>	<u>NIL /<u>b</u></u>	<u>NIL</u>	-
	660,605	112.185	560.0	94.6

/a - No metering

/b - No generating capacity

4. OWEN FALLS HYDRO-ELECTRIC STATION (OPPS):

Thanks to Programme Aid from ODA which brought in essential materials, UEB was able to recommission 5 machines so that by mid-1989 9 machines were available. These improvements in generation ended load-shedding schedules for Kampala, Jinja and in the areas supplied via the western lines. With the arrival and installation of new distribution transformers from Algerian and Belgium, the load on the system continued to rise.

5. SUPPLY TO KENYA:

In 1955 Uganda contracted to supply Kenya with firm power of 45MW for 50 years starting 1958. This agreement was modified in 1964 under which the contracted supply of firm power was reduced to 30MW and Kenya was committed to maintaining a minimum load factor of 90%. Because of shortage of available capacity at OPPS due to outages it has not been possible to maintain the contracted 30MW to Kenya during peak hours which coincide. However, Kenya has been allowed to import up to 60MW off-peak.

6. KABALE POWER STATION

1988 saw the total collapse of the station due to an acute shortage of spares and the poor state of its civil structures. The assessment of the cost of rehabilitating the electrical and mechanical equipment including installation of a third turbine and generator were finalised. In 1988, a contract was awarded to a civil engineering consulting firm and in 1989 a report on civil works rehabilitation worth U.Shs.130 Million was submitted. Actual rehabilitation work, however, continued to be dogged by a lack of funds.

Two new diesel generators (total capacity 700 kVA) were installed during the year.

8. During the year, the following diesel generating sets were installed:-

Plant Location	Number	TOTAL (MW)
Arua	2	0.70
Kabale	2	0.70
Kapchorwa	1	0.14
Kitgum	2	0.39
Moroto	2	0.60
Moyo	1	0.14
Rukungiri	<u>2</u>	<u>0.46</u>
TOTAL	12	3.14
	==	====

9. ADDITIONAL POWER DEVELOPMENTS

Throughout the past several years, OFPS has not been able to operate at its rated capacity (150 MW) for various reasons, but primarily due to repair and maintenance requirements.

UEB has embarked upon a programme, using ODA funds, to rehabilitate and uprate the ten generating units at Owen Falls Power Station from 15MW to 18MW by the use of modern insulating techniques. This project, currently underway, will be completed by 1995.

In addition to the rehabilitation and uprating of Owen Falls Power Station, UEB has recognised the pressing need to expand its generation capacity to meet imminent increases in consumer demand.

Several possible hydro sites along the Nile, downstream from Owen Falls Power Station have been investigated.

They are:-

Bujagali	180 MW
Kamdini	180 MW
Ayago South	240 MW
Ayago North	300 MW
Murchison Falls	480 MW

As an interim measure and before one of these sites which will have a lengthy construction programme, is developed, investigations had begun, by the end of 1989, to establish whether an extension to Owen Falls Power Station to harness about 100 MW is economically, financially and technically feasible, and is the next step in Uganda's least cost power development programme.

TRANSMISSION AND DISTRIBUTION:

The transmission network consists of overhead transmission lines and substations operated at 132, 66, 33 and 11KV. The main 132KV system has remained virtually unchanged since the extension of the 262 km line from Tororo to Lira in the late 1970's. The 33KV sub-transmission system had two major extensions in the 1980's, viz, Lira-Apac (60 km) and Bombo-Nakasongola (80 km).

The total length of the transmission and distribution lines by the end of 1989 was 9,659 km as shown on Page 9.

During 1989, the Board imported four hundred (400) transformers from Algeria and Belgium, and by the end of 1989, 350 of these had been installed on the system. 48 Belgian transformers were imported and installed in 1988. Also, a 15/20MVA 132/33KV transformer funded by an East African Development Bank loan was successfully installed and commissioned at Kampala North substation. During 1990, it is planned to install transformers at Portbell Sub-station.

The start-up of the rehabilitation programme for substations was delayed by more than two years because of access difficulties, and this made the operation of the system difficult due to overload. The reliability of supply will improve towards the end of 1991 or at the beginning of 1992 when rehabilitation of Kampala and some substations along the main grid will be completed.

WESTERN 132KV LINE:

The line is over 30 years old. A consultancy report, carried out under Second Power Project in 1989, found the line badly weakened and not economic to rehabilitate. The Board, however, continues to carry out emergency repairs.

TRANSMISSION AND DISTRIBUTION NETWORK BY END OF 1989

	Overhead	Underground	TOTAL
132V	1,009 / <u>a</u>	-	1,009
66V	80 / <u>b</u>	-	80
33V	2,220	-	2,220
11V	3,890	92	3,982
Low voltage	<u>2,168</u>	<u>200</u>	<u>2,368</u>
TOTAL	8,356	249	9,659
	=====	===	=====

The total transmission transformer capacity was 401 MVA, made up as follows:-

Primary Voltage	Installed Transformer Capacity (MVA)
132V	237.5
66V	22.0
33V	<u>141.5</u>
	401.0
	=====

/a Owen Falls - Kampala North = 2 x 87 km
 Owen Falls - Tororo = 2 x 115 km
 Tororo - Lira = 262 km
 Kabulasoke - Masaka = 65 km
 Kampala North - Nkenda = 300 km

/b Owen Falls - Lugogo = 1 x 80 km

COMMERCIAL:

1. SALES OF ELECTRICITY:

Total sales of electricity by the Board including export to Kenya increased from 372.7 GWh in 1988 to 441.1 GWh in 1989, an increase of 18.4%. There was an increase for Uganda consumers from 262.2 GWh in 1988 to 284.6 GWh in 1989, an increase of 8.4%.

- 2 The Uganda domestic consumers recorded a decrease in consumption from 160.7 GWh in 1988 to 152.3 GWh, a decrease of 5.2%. The number of domestic consumers increased from 62,057 in 1988 to 69,236 in 1989, an increase of 11.6%.
3. The industrial sector tariff group increased by 81.2%, from 39.3 GWh in 1988 to 71.2 GWh in 1989. The number of consumers in this category also increased from 195 in 1988 to 473 in 1989, an increase of 278.0%.
4. The Board executed all topped-up schemes during the year. However, not all paid up services were completed due to constraints on importation of materials required.

WORKSHOPS:

Refregeration and air conditioning/ice plant and Domestic Appliances Workshops have experienced periods of inactivity throughout the 1980's due to budgeting constraints.

ENERGY SALES:

Energy sales in 1989 showed a drop of 12.6% compared to the previous year. This was mainly due to low generation capacity, old distribution transformers requiring replacement and general shortage of line maintenance materials. Most of consumers in the North and North East of Uganda also remained off supply because of poor security in the area.

A detailed analysis of sales of electricity for each year since 1984 are shown on Page.....

5. KENYA BULK SUPPLY:

The units sold to Kenya during the year under review increased from 110 GWh in 1988 to 156.6 GWh in 1989, an increase of 42.4%.

6. CONSUMERS:

The overall number of consumers increased from 80,695 in 1988 to 89,165, an increase of 10.5%.

7. CAPITAL DEVELOPMENT SCHEMES

17 Capital Development Schemes, were accomplished in 1989 compared to 12 schemes in 1988.

PUBLICITY

The Board continues to utilise Radio Uganda to disseminate information to the public through regular programmes in Luganda and English. The Board has also participated in exhibitions during Independence, Labour day and other national celebrations. In 1988, UEB won the Independence Trophy. In 1989, the Board was awarded second place overall.

TARIFFS:

The tariff was not changed during 1989, having been revised in 1988 as follows:

Consumer Category	1st Sept. 1987	1st Sept 1988	% Increase
Domestic	1.40	6.00	238.6
Commercial & Security Lighting	0.85	3.90	358.8
Industrial	0.85	4.00	370.6
General	1.00	4.00	300.0
Hotels & Clubs	1.50	4.00	166.7
Street Lighting	0.70	3.60	414.3

KENYA TARIFF:

The Kenya tariff which had been previously reviewed in 1983 was revised on 1st September, 1988. The effective date of the new tariff, with a Bulk Supply (Kenya cents 16.64 per kWh) and Spill units (Kenya cents 20.25 per kWh up from cents 13.5), was fixed as 1st November, 1984. Arrears arising therefrom totalling Ug. Shs.566,138,080/= were received in 1989. Despite the increase the Kenya Tariff is still very low being equivalent to US Cents per unit.

BLOCK MAPPING:

The Germany Government at the request of Uganda Government agreed to finance a Block Mapping exercise to obtain records of electricity and water installations with great emphasis to distribution details.

The electricity census commenced in February, 1989 in Greater Kampala resulting into 20% coverage by the close of the year under review. The number of houses visited were 10,782, of which 7,673 were receiving U.E.B. supplies. The number of illegal consumers discovered via the exercise numbered 956 or 12.5%.

DEVELOPMENT:

CONSTRUCTION:

1. The Board built or repaired the following lines:-

1988

Nyahesi	33kV	6 km	New
Doho	33kV	20 km	New

1989

Nakasongola	33kV	60 km	Repair
Lukalu	33kV	10 km	New

In the coming year the following lines will be constructed:-

Kiyeyi	33KV	13 km	New
Apac	33KV	40 Km	Repair

2. The current Rural Electrification Programme, being funded by the EEC encompasses supplying electricity to areas via the construction of the following lines:-

	km
Kasese to Kabale	170
Kagamba to Rukungiri	25
Lira to Kitgum	135
Mbarara to Ntungamo	64
Mbarara to Ibanda	64
Gulu to Moyo	160

By the end of 1989, construction work on the Kasese to Kabale 33kV line had begun.

PLANNING:

3. Studies into the possibility of exporting power (126 Gwh/year) to Tanzania by extending a 132KV line from Masaka and supplying Kisoro were finalised. There are also plans to supply Kisoro from Rwanda.

4. MINI HYDRO SCHEMES:

The Energy Sector Management Assistance Programme (ESMAP) of the UNDP/World Bank financed a preinvestment study of the rehabilitation of Kikagati small hydro electric power station and the 33V Kikagati-Mbarara transmission line in 1989. The study was carried out by the staff of the Ministry of Energy (Power department), Uganda Electricity Board and ESMAP. The results of the study from ESMAP are awaited.

5. Other Mini hydro schemes under review:

<u>SITE</u>	<u>ESTIMATED CAPACITY</u>
Paidha	2.0 MW
Musizi	10.0 MW
Ishasha	3.6 MW
Nyamabuye	1.5 MW
Mengo	10.0 MW
Bugoye	7.5 MW
Kakaka	1.5 MW

6. Studies pertinent to Development planning to be undertaken in future include:-

- National Electrification Planning Study (NEPS)
- Loss Reduction Study

CIVIL ENGINEERING:

The Civil Engineering Section carried out the following repairs and construction:-

Residential Houses:

<u>SITE</u>	<u>NUMBER</u>
Kampala	13
Tororo	2
Bombo	1
Lugazi	1

District Offices

- Kampala
- Radio Room
- Jinja
- Jinja Accounts office
- Lugazi
- Lugogo - Water and satinary system

Substation Construction and Repairs

- Kasese
- Bombo
- Port Bell
- Queesway
- Kampala North

1. ACCOUNTS AND AUDITORS' REPORT:

- i The Accounts for the fiscal year ended 31st December, 1989 appear in the following statements: Income and Expenditure Account, Balance Sheet, Revenue Accounts, Capital Expenditure and Capital Provisions; There was no change in the system of accounting as compared with the previous year; The principles of valuation for the Annual Accounts are set out in the explanatory notes to the Balance Sheet and Profit and Loss Statement on Page 5 to Page 8,
- ii Net turnover for 1989 showed an improvement over the previous year and amounted to Shs.1,919,204,772/= against Shs.745,898,904/= in 1988. This was an increase of 157%. The good showing was due mainly to the increased tariff in 1988,
- iii The operating results for 1989 was a deficit of Shs.148,250,520 compared to an operating surplus of Shs.98,505,593/= in 1988.

2. REVENUE EXPENDITURE ANALYSIS.

Total costs amounted to Shs.2,083,425,004, an increase of Shs.1,429,435,408/= which is 218.6% over the previous year. High operating expenditure reflects effects of devaluation of the shilling (from Shs.165/= in 1988 to Shs.370/= to a Dollar by December, 1989, a devaluation of 124%), the inflation trend during the year, substantial repairs of the plant at Owen Falls Power Station, high interest charges due to increased draw down on Power II Project loans during the year were recorded. Other factors were increases in staff costs due to settlements made and high fuel costs,

After deducting Shs.236,898,225/= for loan interest and other expenses, there was a revenue surplus of Shs.105,022,436/= (Shs.220,089,467/= in the previous year),

3. CAPITAL EXPENDITURE ANALYSIS

Page 12 shows expenditure during the year of Shs.902,367,551/= on fixed assets and Shs.538,921,885/= on transport, tools, etc. Total net expenditure at the end of the year was Shs.1,088,934,962/= on fixed assets and Shs.600,050,701/= on transport, tools, etc.

4. Yield on Capital: The rate of return on net capital assets in 1988 was 63.5% and 1989 registered a negative yield of 100.6%.

5. LOANS

- i Repayment of long term loans amounted to Shs.218,009,146/= during the year (Shs.30,738,103/= in 1988) out of which Shs.100,689,544/= was repayment of principal and Shs.117,310,456/= for interest to East African Development Bank.
- ii In 1989, long term borrowings increased from Shs.911,955,856/= to Shs.7,291,220,819/=. Government advances amounted to Shs.436,523,724/=. Shs.266.0 million of Government advances was utilised as local cover for a British Grant for various imports. The balance of the Government advance paid for the importation of distribution transformers from Algeria under a Barter Trade Protocol.
- iii The external borrowings during the year amounted to Shs.6,117,753,101/= representing increased activities under Power II Project compared to Shs.536,364,956/= in 1988.
- iv Short term borrowings also increased from Shs.553,850,335/= in 1988 to Shs.3,885,665,666/= in 1989.

6. BALANCE SHEET

The notes in the Auditors' Report are self explanatory. However, the continued rise in the debtors balances, Shs.829,432,646/= in 1989 against Shs.464,522,016/= in 1988; is a cause for increasing concern to the Board while debtors increased by Shs.336,233,254/= in 1988, the increase in 1989 was Shs.364,910,630/=.

POWER II PROJECT

- i The Power II Rehabilitation Project was conceived in the early 1980's to rehabilitate and update the Board's generation plant, transmission, distribution and communication systems, Training of UEB staff and various studies by consultants.

In 1985, International Development Association (IDA), Commonwealth Development Corporation (CDC) and Overseas Development Administration (ODA) extended various credits to the Government of Uganda and Uganda Electricity Board for the Rehabilitation work.

- ii (a) The cost of the program was initially estimated as follows:-

			U.S.\$ (in Millions)	
			<u>Equivalent</u>	<u>% Contribution</u>
IDA	SDR	26.0M	34.06M	42
CDC	P.Stg	9.6M	15.07M	19
ODA	P.Stg	9.34	14.66M	18
UEB	US\$	17.20	17.20M	21
			-----	----
			80.99M	100
			=====	=====

* Rate: Sterling/Dollar = 1.57
 SDR/Dollar = 1.31

The total IDA Credit is SDR 29.5M, out of which SDR 3.5M was earmarked for Ministry of Energy and the balance of SDR 26.0M for UEB.

(iii) Following the Prioritisation Studies of 1989, the contributions altered as follows:-

			U.S.\$ <u>Equivalent</u>	<u>% Contribution</u>
IDA	SDR	26.0M	34.06M	36.95
CDC	P.Stg.	9.6M	15.07M	16.35
ODA	P.Stg.	15.0M	23.55M	25.55
* ODA T.A.	P.Stg.	1.46M	2.29M	2.48
UEB	US\$	17.2M	17.20M	18.67
			-----	-----
			92.17M	100.00
			=====	=====

* ODA Technical Assistance (T.A.) - is a Grant

(iv) IMPLEMENTATION:

Due to a two and a half years delay in Project take off less than 50% of the total Project was completed by 31st December 1989. This will necessitate the extension of the total Project completion date from 31st December 1990 to 31st December 1991.

At Owen Falls Power Station, work has been completed on the structural repairs and strengthening of the foundations of the Power Station. Refurbishing and rewinding of the turbines and generators is underway.

Consultancy studies which have been completed under the Second Power Project include:-

- (a) Power Development study of the Uganda Electricity, September, 1986.
- (b) Assessment of Management, Organisation, Manpower and Training Requirements of UEB, July, 1987.
- (c) Selective staff Development Study and Training Manual, October, 1988.
- (d) Billing and Collection Study, July, 1986.
- (e) Review of Stores and vehicle workshop facilities and procedures, November, 1986.
- (f) Rehabilitation of the Kampala Network, November, 1989.

Studies in progress include:-

- (a) Feasibility study to supply electrical power to Western Uganda.
- (b) Household Energy Planning Programme.
- (c) Feasibility of an extension to OFPS
- (d) Tariff Study.

(v) Problems

During the year Project implementation experienced difficulties particularly in processing payments through Bank of Uganda. This resulted into charging interest on delayed payments. Several efforts have been undertaken to reduce this bottleneck, and by the end of 1989 the situation had started to improve.

UGANDA ELECTRICITY BOARD

REVENUE EXPENDITURE ANALYSIS

The following statement shows the total costs charged to revenue account:-

	1989 (SHS.)	1988 (SHS.)	£
Loan Interest	105,021,678	220,121,594	24.7
Loan Expenses	NIL	NIL	0.0
Depreciation (less surplus on assets written off)	18,707,672	1,753,752	0.2
Total Capital Charges	123,729,350	221,875,346	24.8
<u>Operating Costs:</u>			
Generation	207,422,744	87,310,389	10.1
Transmission and Distribution	633,761,445	150,229,177	17.3
Sales Development	25,731,596	10,866,999	1.3
Meter Reading	32,865,231	14,287,072	1.7
Training and Welfare	24,310,905	7,786,069	1.0
Management and General	1,141,430,955	383,698,173	44.4
	2,065,522,876	654,177,879	75.4
LESS: Rents charged on departments	805,544	1,974,935	0.2
Net Operating Costs	2,064,717,332	652,202,944	75.2
TOTAL COSTS	2,309,246,953	867,612,699	100

8. FINANCIAL OUTLOOK:

While the Board has reason to be satisfied with the good progress made over 1989 under the Second Power Project, it is also aware that the future holds problems of considerable magnitude. Further adjustments to the shilling and future debt repayments will inevitably lead to substantial tariff revisions as a medium term measure while in the long term, rationalisation of the Board's capital structure will have to be addressed.

9. TAXATION:

The Auditors' Notes No..... for 1986 and No. 1987 referred to deferred taxation of Shs..... and Shs..... for 1986 and 1987 respectively.

10. TRIBUTE TO STAFF:

The Board is extremely appreciative of the excellent manner in which members of its staff discharged their duties during the year under review.

A.R. RUTTA - MANAGING DIRECTOR

H.N. BYAKIKA - SECRETARY

UGANDA ELECTRICITY BOARD

ACCOUNTS

31 DECEMBER 1989



Coopers
& Lybrand

UGANDA ELECTRICITY BOARD

REPORT OF THE AUDITORS TO THE BOARD OF DIRECTORS OF UGANDA ELECTRICITY BOARD

We have audited the accounts set out on pages 2 to 12. The accounts are in agreement with the books which have been properly kept. We obtained the information and explanations we required except for the matter referred to in paragraph 2 below.

2. The Board did not carry out a physical stock count at the end of the year. The stores stated in the balance sheet at Shs.1,110,781,327 are based on book balances in the nominal ledger which are unreliable because they differ from the stocks financial ledger figures and no reconciliation has been prepared. Consequently, we are unable to confirm the existence and value of the stores or to satisfy ourselves that stores are fairly stated.

3. Subject to any adjustment that may be necessary when the uncertainty in paragraph 2 above is resolved, in our opinion, the accounts give a true and fair view of the state of the Board's affairs at 31 December 1989 and of its results and source and application of funds for the year then ended.

CHARTERED ACCOUNTANTS

KAMPALA.

UGANDA ELECTRICITY BOARD

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED 31 DECEMBER 1989

	Note	1989 Shs.	1988 Shs.
TURNOVER		1,919,204,772	745,898,904
=====			
DEFICIT FOR THE YEAR (Page 11)		(253,272,956)	(121,583,874)
TAXATION	3.	-	-
DEFICIT AFTER TAXATION		(253,272,956)	(121,583,874)
EXTRAORDINARY ITEMS	4.	958,434,646	136,071,512
=====			
SURPLUS FOR THE YEAR AFTER TAXATION AND EXTRAORDINARY ITEMS		Shs. 705,161,690	14,487,638
=====			

STATEMENT OF RESERVES USED IN THE BOARD'S BUSINESS

1 JANUARY		4,231,776	(10,255,862)
SURPLUS FOR THE YEAR		705,161,690	14,487,638
31 DECEMBER	Shs.	709,393,466	4,231,776
=====			

Report of the auditors - page 1.

The notes on pages 4 to 6 form part of these accounts.

UGANDA ELECTRICITY BOARD

BALANCE SHEET - 31 DECEMBER 1989

	Note	1989 Shs.	1988 Shs.
Reserves used in the			
Board's business		709,393,466	4,231,776
Pension scheme		11,772,709	0,935,155
		<u>721,166,175</u>	<u>13,166,931</u>
Loans	5.	7,291,220,819	911,955,856
			<u>155,236,321</u>
		1,473,473,319	155,236,321

FIXED ASSETS (Page 12)
TRANSPORT, TOOLS, AND
EQUIPMENT

INVESTMENTS	6.	42,143	42,901
POWER II DEVELOPMENT EXPENDITURE	7.	7,299,643,134	464,647,925

CURRENT LIABILITIES

Creditors	3,515,575,039	332,207,194
Consumers' deposits	19,063,510	6,940,143
Interest accrued	342,899,982	213,575,863
Taxation	1,127,135	1,127,135
	<u>3,885,665,666</u>	<u>553,850,335</u>
	11,898,052,660	1,478,973,122

Stores
Debtors
Bank balances and cash

Stores	1,110,781,327	125,346,763
Debtors	829,432,546	464,522,016
Bank balances and cash	1,194,681,091	269,177,195
	<u>3,134,895,064</u>	<u>859,045,975</u>
	11,898,052,660	1,478,973,122

The accounts were approved by the board of directors on and are signed on its behalf by :-

..... MANAGING DIRECTOR..... FINANCE MANAGER

Report of the auditors - page 1.

The notes on pages 4 to 6 form part of these accounts.

UGANDA ELECTRICITY BOARD

STATEMENT OF SOURCE AND APPLICATION OF FUNDS FOR THE YEAR ENDED 31 DECEMBER 1989

	1989 Shs.	1988 Shs.
SOURCE OF FUNDS		
Deficit for the year	(253,272,956)	(121,583,874)
Extra-ordinary items	958,434,646	136,071,512
Adjustments for non fund items:		
Foreign exchange losses (unrealised)	488,770,629	224,360,704
Depreciation	31,991,818	16,635,822
Investments written off	758	773
Pension scheme	2,837,554	3,465,809
Interest accrued	130,430,298	197,524,633
	654,031,057	441,987,741
Total generated from operations	1,359,192,747	456,475,379
FUNDS FROM OTHER SOURCES		
Loans	6,117,753,101	536,364,956
Capital contribution	91,068,521	82,831,471
Consumers deposits	12,123,367	3,413,505
	6,220,944,989	622,609,932
	7,580,137,736	1,079,085,311
APPLICATION OF FUNDS		
Fixed assets	1,441,296,337	145,125,412
Development expenditure	6,824,995,209	464,647,925
Loans repaid	218,009,146	30,738,103
	8,484,300,692	640,511,440
	(904,162,956)	438,573,871
INCREASE/(DECREASE) IN WORKING CAPITAL		
Stores	985,434,564	84,178,569
Debtors	364,910,630	336,233,254
Creditors	(3,180,012,046)	(285,057,418)
Movement in net liquid funds		
Bank and cash balances	925,503,896	265,731,144
Bank overdraft	-	37,488,322
	925,503,896	303,219,466
	(904,162,956)	438,573,871

UGANDA ELECTRICITY BOARD

NOTES TO THE ACCOUNTS 31 DECEMBER 1992

1. PRINCIPAL ACCOUNTING POLICIES

The accounts are prepared in accordance with the historical cost convention as modified by the revaluation of certain of the Board's fixed assets. The following is a summary of the more important accounting policies used.

a) Depreciation

Depreciation is calculated to write off the cost of fixed assets, net of capital contributions, on a straight-line basis over the expected useful lives of the assets concerned. The annual rates used for this purpose are :-

	%
Owen Falls Civil Engineering Work	1.25
Owen Falls Plant	2.5
Other Generating Stations	4.0
Transmission and distribution buildings, plant and lines	3.08
Administration land and buildings and staff houses	2.5
Motor vehicles - private	20.0
- commercial	33.33
Furniture and fittings	12.5

Under Section 8 of the 1961 Electricity Act, the Board is required to make proper provision for the redemption of any loan raised by the Board and for depreciation or renewal of assets. It is the Board's opinion that the transfer to reserves complies with this requirement.

b) Stores on hand and in transit

Stores on hand are stated at cost which is determined on an average basis for most electrical materials and spares and on a first in, first out basis, for sundry stocks. Cost includes transport and handling charges. Stores in transit are stated at the amounts paid at the balance sheet date.

These bases are consistent with those of the previous year.

c) Foreign Currencies

Assets and liabilities expressed in foreign currencies are translated to Uganda shillings at the rates of exchange ruling at the year end.

d) Bad and doubtful debts

Known bad debts are written off and specific provision is made for any debts which appear irrecoverable. In addition a general provision is made on the balance of debtors, excluding large balances specifically identified as recoverable.

e) Pension Scheme Arrangements

The Board's pension scheme is funded internally. A transfer is made to the fund annually based on salaries and wages paid to pensionable employees during the year. It is intended that the fund should be valued quinquennially by actuaries, any deficiency being provided in the year in which the valuation is made. However no such valuation has been done to date.

.....continued.....

UGANDA ELECTRICITY BOARD

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 1989 (continued)

f) Turnover

Turnover represents sales of energy excluding the commercial transactions levy.

g. BORROWING POWERS

The Board's borrowing powers as agreed by the Uganda Government before the floating of the Uganda shilling are a total of Shs.660 million. However, all the loans are guaranteed by the Uganda Government.

3. TAXATION	1989 Shs.	1988 Shs.
-------------	--------------	--------------

On the results for the year

- -
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4. EXTRAORDINARY ITEMS

Kenya Power & Lighting Co. Limited,
Arrears of power charges

566,138,080 -

Grants/donations of vehicles
and materials by the British
Government (ODA) and EEC

392,296,566 136,071,512

958,434,646 136,071,512
=====

5. LOANS	Authorised Shs.	Balance at 31 December 1989 Shs.	Repayable
Uganda Electricity Board 5% guaranteed stock 1972/78	1,200,000	1,081,310	Not later than 1978.
Electricity Development bonds	275,000	81,522	At one month's notice
Payments made by Uganda Government to cover the redemption of the 4.75% stock 1969/73	-	450,000	Not yet agreed
Repayment of the loan from International Bank for Reconstruction and Development by Uganda Government	-	422,239	Not yet agreed.
Other short term loans and advances by the Uganda Government	-	282,350	On demand
Totals carried forward	1,475,000	2,317,421	

.....continued.....

UGANDA ELECTRICITY BOARD

NOTES TO THE ACCOUNTS - 31 DECEMBER 1989 (continued)

Loans continued	Authorised Shs.	Balance at 31 December 1989 Shs.	Repayable
Totals brought forward	1,475,000	2,317,421	
Lloyds Bank Export Finance Limited	-	220,866,353	
Customs and sales tax due to Uganda Government on imports financed under I.D.A. II	4,919,239	32,754,917	Not later than 1987
East African Development Bank	-	398,218,732	
Uganda Government - UK/Algeria Barter Trade Protocol	-	412,894,833	

POWER II PROJECT LOANS:

International Development
Association (IDA) World
Bank Loan

SDR 26m 2,658,366,594

Commonwealth Development
Corporation (CDC) Loan

£ 9.6m 2,152,185,049

Overseas Development
Administration (ODA) Loan

£16.46m 1,413,616,920

34,000,000,000 6,224,168,563 Not later than
2011

Total Shs. 34,006,394,239 7,291,220,819

The amounts due in respect Uganda Electricity Board 5% guaranteed stock 1972/78 and Electricity Development Bonds are guaranteed by the Uganda Government.

6. INVESTMENTS at cost

	1989 Shs.	1988 Shs.
a) Investment in Amber House Limited	58,956	58,956
Less amounts written off to date	21,813	21,055
	37,143	37,901
b) 7% Uganda House Debenture	5,000	5,000
	42,143	42,901

No account has been taken of interest due but not received on the debenture.

7. POWER II DEVELOPMENT EXPENDITURE

These are expenses incurred on the rehabilitation of the Generation, Transmission and Distribution Lines funded by the Overseas Development Administration (ODA), International Development Association (IDA) and the Commonwealth Development Corporation (CDC) (Note 5). The expenditure is to be transferred to fixed assets on completion of each stage.

.....continued.....

UGANDA ELECTRICITY BOARD

NOTES TO THE ACCOUNTS - 31 DECEMBER 1989 (continued)

8. CAPITAL COMMITMENTS	1989 Shs.	1988 Shs.
Commitments in respect of contracts	35,855,258	15,575,763
Approved by the Board in addition to contracts	-	-
	Shs. 35,855,258	15,575,763
	=====	=====

Report of the auditors - page 1.

UGANDA ELECTRICITY BOARD

REVENUE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 1989

INCOME:	1989 Shs.	1988 Shs.
Sales of energy	1,919,204,772	745,898,904
Meter rents	3,732,350	2,102,000
Surplus on sale and repair of apparatus	12,237,362	4,494,285
	<u>1,935,174,484</u>	<u>752,495,189</u>

OPERATING COSTS GENERATION

Cost of fuel	54,689,715	8,784,924
Oil and water	438,249	3,551,467
Salaries and wages	44,855,418	19,100,696
Provident fund, social security, pension and gratuity contributions	3,048,706	1,072,794
Medical expenses	7,532,370	2,433,040
Repairs and maintenance	40,970,957	17,459,878
Transport and travelling	24,877,435	25,750,967
Store-keeping and workshop expenses	11,534,891	291,401
Rates, rents and insurance	8,190,405	3,320,000
General expenses	2,656,686	5,545,222
Telephones and telexes	8,627,912	-
	<u>207,422,744</u>	<u>87,310,389</u>
Depreciation - fixed assets	91,182	78,356
- tools and equipment	3,134,410	62,583
	<u>3,225,592</u>	<u>140,939</u>
	<u>210,648,336</u>	<u>87,451,328</u>

TRANSMISSION AND DISTRIBUTION

Salaries and wages	137,977,402	82,698,999
Provident fund, social security, pension and gratuity contribution	6,219,106	2,329,006
Medical expenses	4,135,771	1,171,932
Repairs and maintenance	326,436,082	48,512,490
Transport and travelling	99,989,479	5,647,682
Store-keeping and workshop expenses	34,329,878	1,243,653
Rent and rates	10,215	623
Communications	1,122,911	461,599
General expenses	1,849,962	8,163,193
Telephones and telexes	21,690,639	-
	<u>633,761,445</u>	<u>150,229,177</u>
Depreciation - fixed assets	2,383,672	1,220,105
- tools and equipment	10,037,279	135,597
	<u>12,420,951</u>	<u>1,355,702</u>
	<u>646,182,396</u>	<u>151,584,879</u>

.....continued

UGANDA ELECTRICITY BOARD

REVENUE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 1988 (continued)

SALES DEVELOPMENT EXPENSES:	1988 Shs.	1989 Shs.
Salaries and wages	10,116,804	5,461,870
Provident fund, social security, pension and gratuity contributions	609,742	270,414
Medical expenses	2,180,315	1,290,960
Repairs and maintenance	633,835	5,612
Transport and travelling	6,413,930	1,251,670
Publicity and exhibition	987,137	177,230
General expenses	4,240,557	2,409,243
Telephone and telexes	549,276	-
	25,731,596	10,866,999
METER READING EXPENSES:		
Salaries and wages	11,532,268	5,925,161
Provident fund, social security, pension and gratuity contributions	914,612	332,154
Transport and travelling	19,541,489	7,477,486
General expenses	681,634	552,271
Telephone and telexes	195,228	-
	32,865,231	14,287,072
TRAINING AND WELFARE:		
Salaries and wages	1,835,642	724,615
Provident fund, social security, pension and gratuity contributions	121,948	40,837
Medical expenses	479,100	260,350
Transport and travelling	217,512	82,830
Printing and stationery	133,578	23,390
Repairs and maintenance	24,800	5,800
Electricity and water	36,990	-
Staff welfare	13,352,473	5,970,618
Scholarships	8,108,862	677,629
	24,310,905	7,786,069

UGANDA ELECTRICITY BOARD

REVENUE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 1989 (continued)

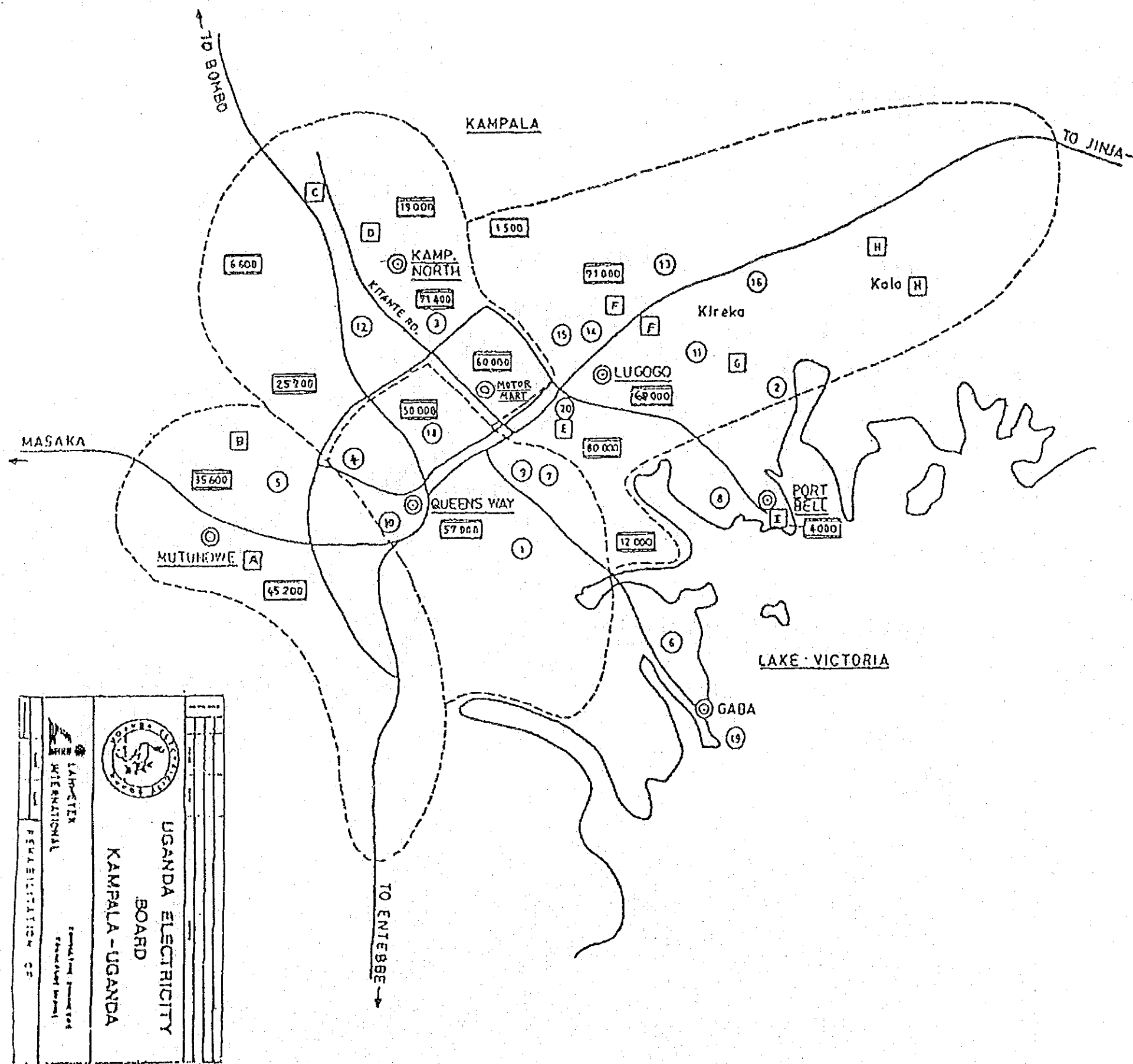
MANAGEMENT AND GENERAL EXPENSES:

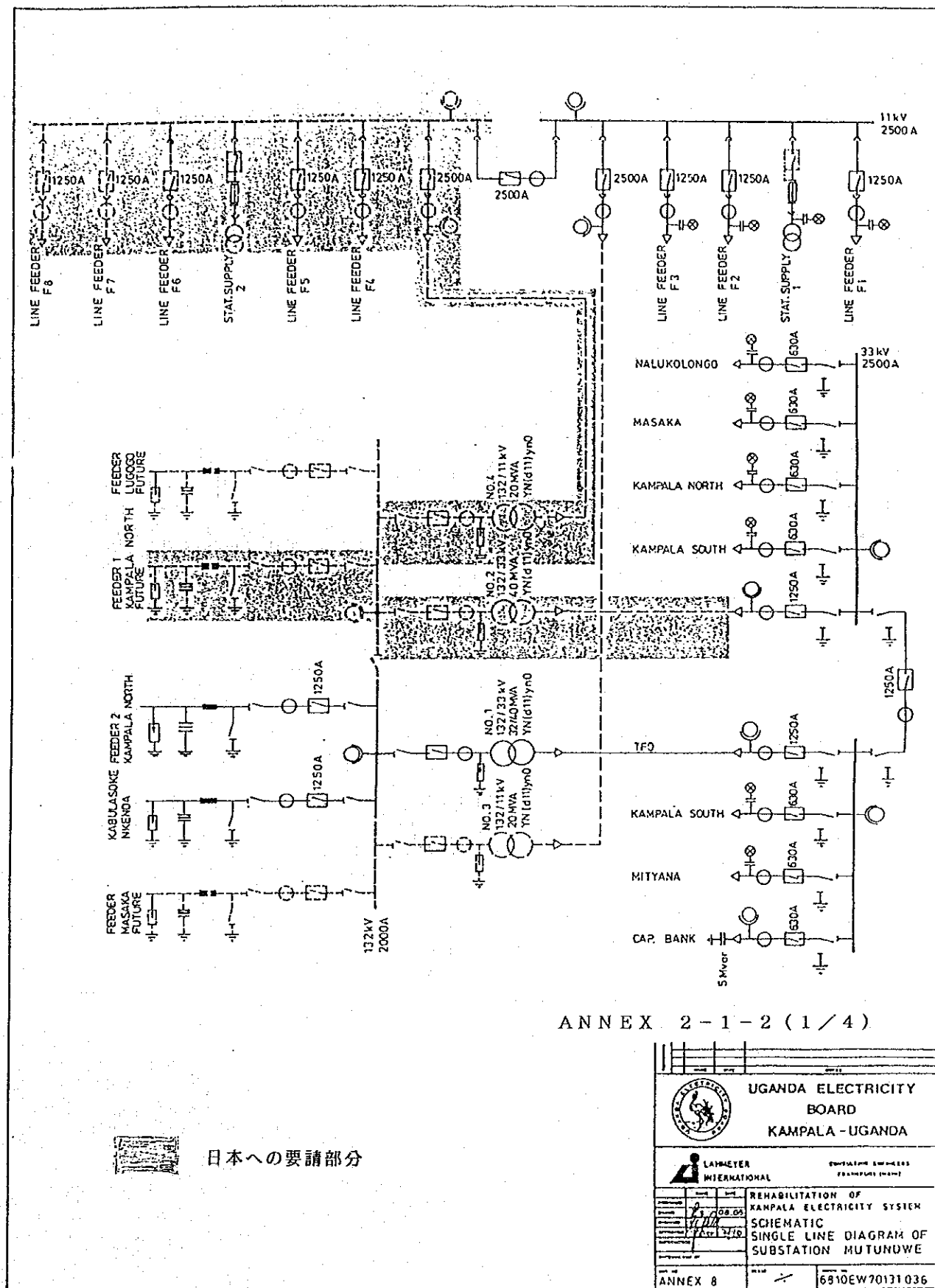
	1989 Shs.	1988 Shs.
Salaries and wages	94,447,132	50,957,686
Bad and doubtful debts	170,629,191	8,385,193
Board members' remuneration	1,088,081	737,100
Provident fund, social security, pension and gratuity contributions	12,381,281	3,601,767
Transport and travelling	102,335,019	22,227,416
Medical expenses	34,460,424	8,926,483
Audit fees	2,991,956	4,947,462
Legal expenses	13,840,969	48,250
Bank charges	3,844,430	1,530,400
Subscriptions	1,112,790	388,680
Insurance premium	10,777,358	1,486,154
Stationery, publications, printing and advertising	49,843,196	8,928,035
Exchange losses	488,770,629	224,360,704
Postage, telephone and revenue stamp	4,276,191	12,983,078
Repairs and maintenance of offices and houses	83,266,742	28,119,077
Electricity and water for office	1,118,225	22,564
Rents and rates	(3,285,779)	(1,664,757)
Interest on consumers' deposits	173,503	82,379
General expenses	14,173,856	4,426,712
Mechanised system expenses	26,196,551	3,303,790
Telephones and telexes	28,989,210	-
	1,141,430,955	383,698,173
Depreciation - fixed assets	305,206	226,889
- tools and equipment	2,755,923	63,122
	3,061,129	290,011
	1,144,492,084	383,988,184
Less: Rents charges on own property	805,544	1,974,935
	1,143,686,540	382,013,249
TOTAL OPERATING COSTS	2,083,425,004	653,989,596
OPERATING SURPLUS/DEFICIT	(148,250,520)	98,505,593
OTHER EXPENSES:		
Loan interest payable (net)	105,021,678	220,121,594
Amount written off investment	758	773
	105,022,436	220,122,367
Less sale of scrap	-	32,900
	105,022,436	220,089,467
DEFICIT FOR THE YEAR	Shs. (253,272,956)	(121,583,874)

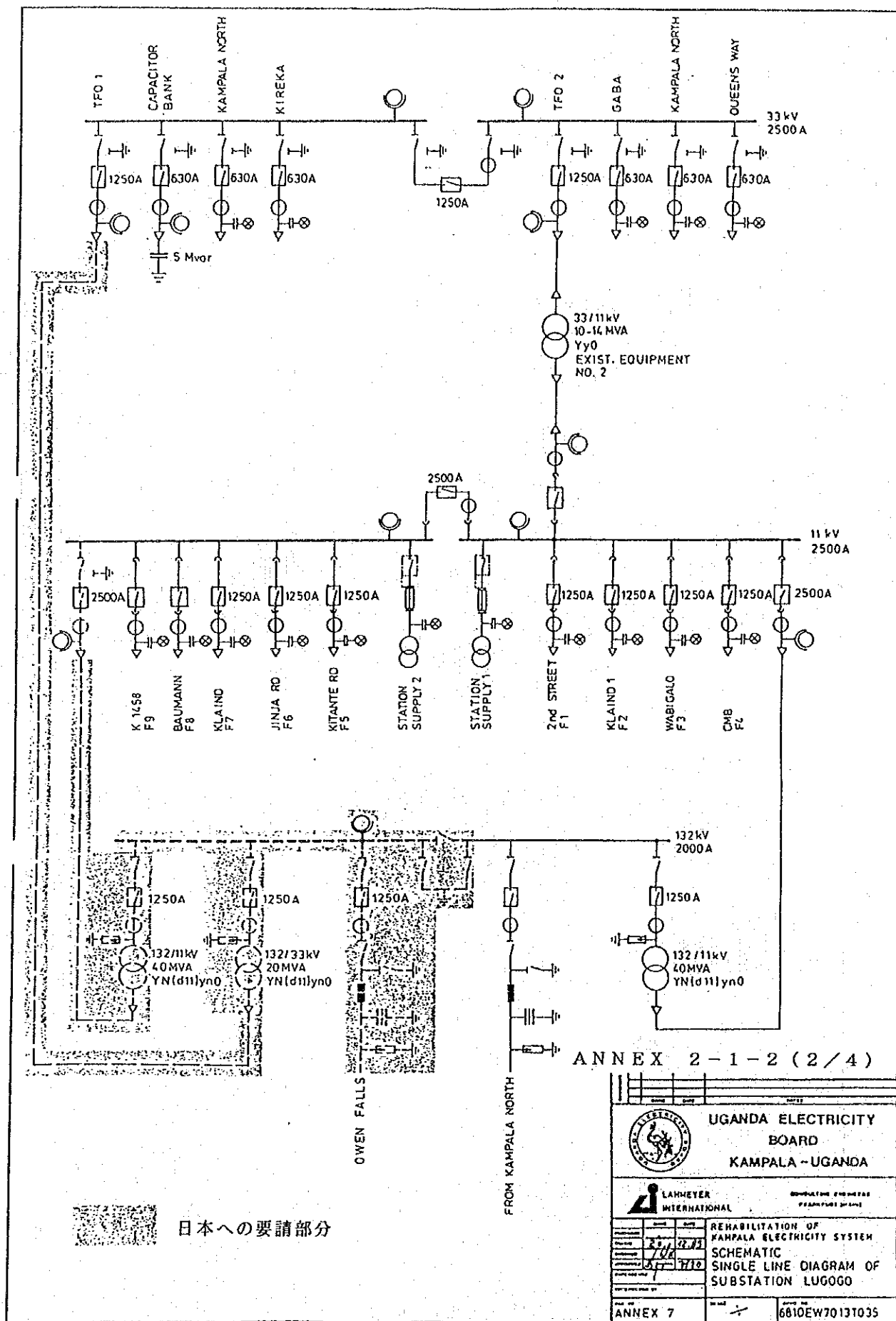
UGANDA ELECTRICITY BOARD

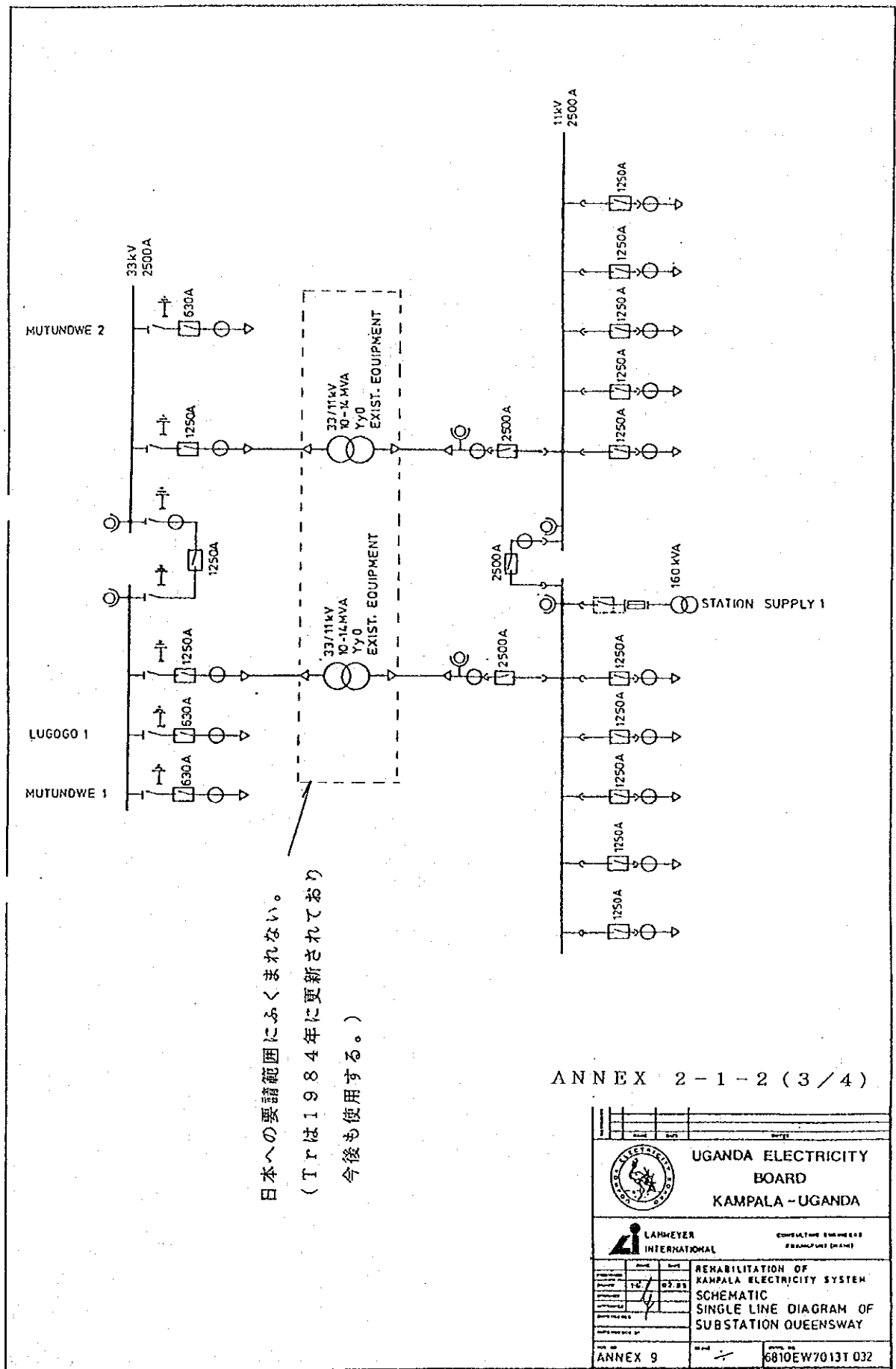
STATEMENT OF CAPITAL EXPENDITURE AND CAPITAL PROVISIONS AT 31 DECEMBER 1988

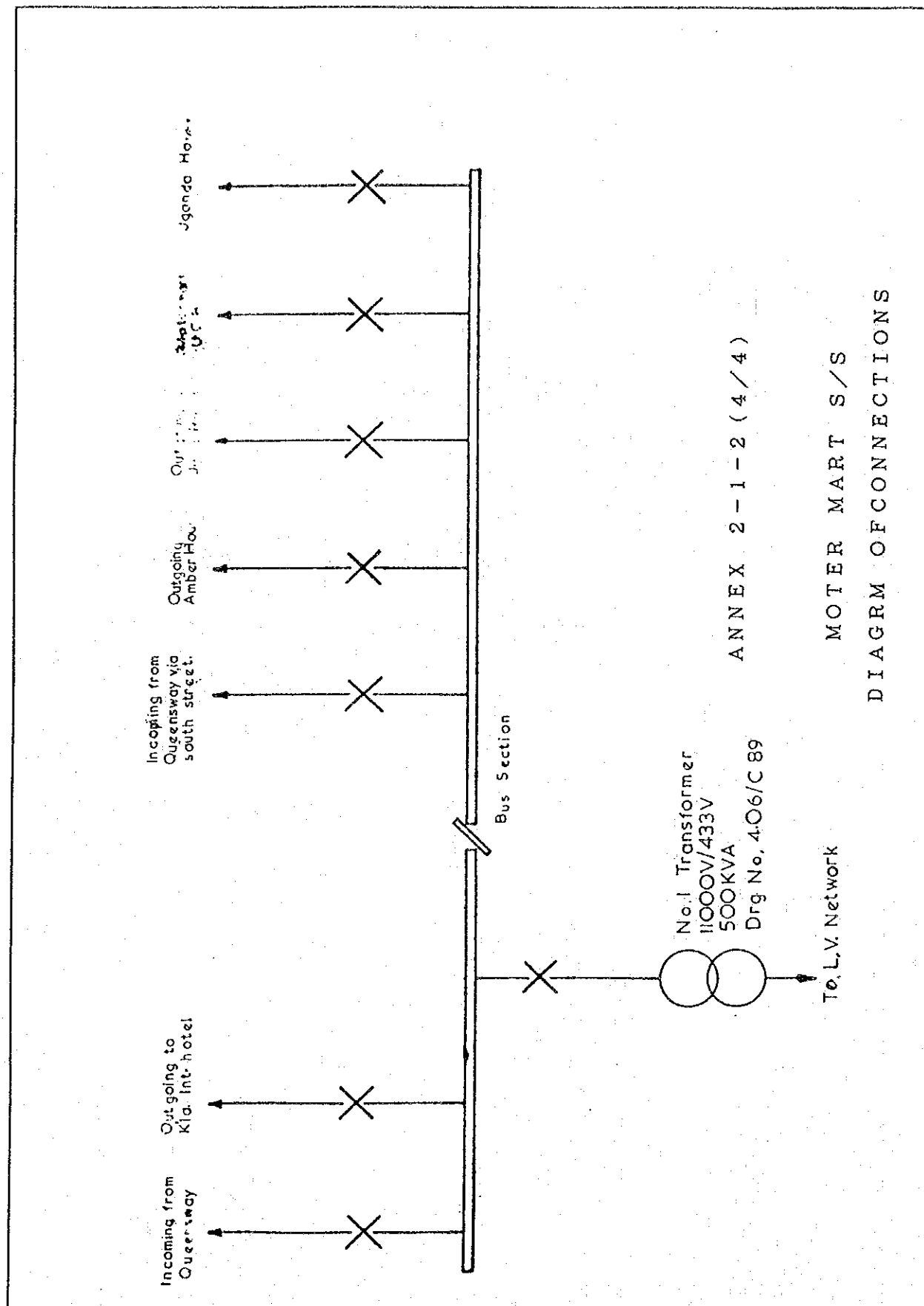
	Expenditure to 31 December 1988	Expenditure during 1989	Expenditure at 31 December 1989	Aggregate depreciation and revenue contributions 31 December 1988	Depreciation for the year on net capital expenditure	Aggregate capital contribution and revenue 31 December 1989	Aggregate depreciation and capital contributions 31 December 1989	Net book value at 31 December 1989
GENERATION:								
Owen Falls Hydro Electric Station	Shs. 3,438,060	Shs. -	Shs. 3,438,060	Shs. 1,927,352	Shs. 64,134	Shs. 6,000	Shs. 1,997,455	Shs. 1,440,554
Other building and Plant and machinery	632,211	210,182,923	210,855,134	221,140	27,048	-	248,188	210,516,945
	4,120,271	210,182,923	214,303,194	2,148,502	91,182	6,000	2,245,643	212,057,510
TRANSMISSION AND DISTRIBUTION:								
Buildings	108,838	-	108,838	31,916	3,352	-	35,268	73,570
Transmission, distribution and service lines	125,452,175	378,871,416	504,323,591	16,936,357	782,168	191,118,732	208,837,257	295,485,334
Plant and machinery	37,532,923	189,165,471	226,698,394	1,530,461	1,156,014	-	2,736,475	222,962,919
Meters	8,842,754	-	8,842,754	324,684	442,138	-	766,822	8,075,932
	171,936,690	567,037,887	738,974,577	18,873,418	2,383,672	191,118,732	212,375,822	526,598,755
ADMINISTRATION:								
Leasehold land and buildings	9,621,550	119,295,256	128,916,806	452,123	240,539	-	722,662	128,194,144
Furniture and fittings	888,800	5,951,485	6,740,285	104,409	64,667	-	169,076	6,571,209
	10,510,350	125,146,741	135,657,091	556,532	305,206	-	891,738	134,765,353
	Shs. 186,557,311	902,367,551	1,088,934,862	21,603,452	2,780,060	191,124,732	215,513,244	873,421,618
TRANSPORT, TOOLS AND EQUIPMENT:						TOTALS 1989		
	Motor vehicles Shs.	Tools and equipment Shs.	Office machinery Shs.			Shs.		
Net book value at 1 January 1989	68,973,095	19,285,681	2,081,798			90,340,574		
Additions	181,253,025	12,361,174	345,307,686			538,921,885		
	250,226,120	31,646,855	347,389,484			629,262,459		
Less: Depreciation	26,039,476	2,755,923	416,359			29,211,758		
NET BOOK VALUE AT 31 DECEMBER 1989	224,186,644	28,890,932	346,973,125			600,050,701		











ANNEX 2 - 2

UGANDA ELECTRICITY BOARD

MATERIALS REQUIRED FOR KAMPALA SYSTEM REHABILITATION

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
			US DOLLARS	US DOLLARS
1.00	JP FUSES 80A.....	10,000.00	2.71	27,052.08
2.00	JP FUSES 160A.....	10,000.00	2.79	27,916.67
3.00	JP FUSES 315A.....	10,000.00	3.09	30,946.43
4.00	JP FUSES 400A.....	10,000.00	4.50	45,008.93
5.00	HRC FUSES 60/80A.....	10,000.00	1.15	11,468.75
6.00	INTERIOR CUT OUT 150A.....	500.00	302.79	151,395.83
7.00	INTERIOR CUT OUT 300A.....	500.00	357.17	178,584.82
8.00	60/80A SP HOUSE SERVICE CUT OUTS.....	5,000.00	11.58	57,901.79
9.00	ELEMENTS SLOW BURNING 5A.....	600.00	1.79	1,071.00
10.00	ELEMENTS SLOW BURNING 15A.....	1,200.00	2.88	3,456.00
11.00	ELEMENTS SLOW BURNING 25A.....	1,200.00	2.88	3,456.00
12.00	70 SQ MM 11KV 3C PILC (OR XLPE) CU CABLE IN MTS	1,000.00	36.00	36,000.00
13.00	CORK SHEET 1.2MX1.2MX3MM.....	100.00	54.00	5,400.00
14.00	CORK SHEET 1.2MX1.2MX6.4MM.....	100.00	87.12	8,712.00
15.00	CORK SHEET 1.2MX1.2MX1.6MM.....	100.00	36.00	3,600.00
16.00	MANILA ROPES 24 MM (85KG) IN COILS.....	10.00	648.00	6,480.00
17.00	MANILA ROPES 16 MM (42KG) IN COILS.....	10.00	312.66	3,126.60
18.00	MANILA ROPES 12 MM (23KG) IN COILS.....	10.00	183.35	1,833.48
19.00	PREFORMED PT MAKE OFF FOR 7/8 SWG STAY WIRE.....	1,500.00	9.00	13,500.00
20.00	PREFORMED PT MAKE OFF FOR 7/12 SWG STAY WIRE.....	1,500.00	9.00	13,500.00
21.00	PREFORMED WRAP GUY GRIPS FOR 7/8 SWG STAY WIRE..	2,500.00	2.81	7,020.00
22.00	PREFORMED WRAP GUY GRIPS FOR 7/12 SWG STAY WIRE..	1,000.00	2.18	2,176.20
23.00	TURN BUCKLES 10"*5/8" EYE EACH END.....	500.00	5.40	2,700.00
24.00	TURN BUCKLES 10"*3/4" EYE EACH END.....	500.00	5.40	2,700.00
25.00	SILCA GEL IN 25KG PACK.....	50.00	288.00	14,400.00
26.00	25 KVA SINGLE PHASE 11KV/LV.....	150.00	1,649.70	247,455.00
27.00	50 KVA THREE PHASE 11KV/LV.....	100.00	2,365.74	236,574.00
28.00	100 KVA THREE PHASE 11KV/LV.....	50.00	3,130.92	156,546.00
29.00	315 KVA THREE PHASE 33KV/LV.....	5.00	8,721.18	43,605.90
30.00	SURGE ARRESTORS 11KV.....	1,200.00	126.00	151,200.00
31.00	SURGE ARRESTORS 33KV.....	900.00	162.00	145,800.00
32.00	AUTORECLOSURES 11KV.....	30.00	5,338.97	160,169.12
TOTAL.....				1,800,756.60

ANNEX 2 - 4

TRANSPORT REQUIREMENTS FOR KAMPALA REHABILITATION

<u>DESCRIPTION</u>	<u>QTY</u>	<u>APPROX. COST</u>
Lorries	7	350,000
4 Wheel drive vehicles	8	200,000
Self loading lorries	2	100,000
Street Lighting vehicle	1	25,000
Spares	1 lot	25,000
TOTAL US \$		700,000

ANNEX 2 - 6

THE REHABILITATION REQUIREMENTS FOR THE KAMPALA NETWORK

Below is a table of projects that are required under Kampala rehabilitation program:-

NAME OF PROJECT	AMOUNT OF MONEY REQUIRED	PROPOSED FINANCIER	EXPECTED DATE FOR STARTING WORKS
132/11KV Kampala North S/S	US\$2,182,000.00	World Bank	1991-1992
132/11KV S/S Lugogo (Phase I)	US\$2,294,000.00	World Bank	1991-1992
132/11KV S/S Lugogo (Phase II)	US\$1,624,000.00	World Bank	1991-1992
132/11KV S/S Mutundwe (Phase I)	US\$1,402,000.00	World Bank	1991-1992
132/11KV S/S Mutundwe (Phase II)	US\$2,800,000.00	World Bank	1991-1992
33/11KV S/S Kireka	US\$ 634,500.00	World Bank	1991-1992
33/11KV S/S Port Bell	US\$ 856,500.00	World Bank	1991-1992
33/11KV S/S Queensway	US\$1,200,000.00	World Bank	1991-1992
11KV S/S Kitante Road	US\$ 500,000.00	World Bank	1991-1992
33/11KV S/S Gaba	US\$ 822,000.00	World Bank	1991-1992
33/11KV S/S Motor Mart	US\$ 700,000.00	World Bank	1991-1992
11KV Underground cable system rehabilitation	US\$ 500,000.00	World Bank	1990
132KV Overhead Lines Construction	US\$ 500,000.00	World Bank	1990-1991
<i>Mutundwe Connection</i>			
<i>Lugogo Connection</i>			
33KV Overhead Lines Construction	US\$ 800,000.00	World Bank	1990-1991
Radio Communication	US\$2,800,000.00		
SCADA	US\$4,200,000.00		
Motor Vehicles (Phase I)	US\$ 700,000.00	Nordic Dev. Fund	1991
Street Lighting (Phase I)	US\$1,800,000.00		
Distribution Transformer and low Voltage Materials.	US\$1,800,000.00		

TOTAL = US\$28,115,000.00

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