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THE WORLD BANK
Washington, D.C.

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Washington DC 20433
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292-10



The World Bank Group
Archives
 1581214
 A1995-141 Other # 7 Box # 193429B
 Kariba Electric Power Development Project (01) - Zimbabwe - Federation
 of Rhodesia and Nyasaland - Loan 0145 - P003264 - Administration -



USA PATENT No. 1484611
MADE IN U. S. A.

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WBG Archives

This file is closed. For correspondence
starting April 1, 1962, please see Volume VI.

KN-145

TELEPHONE: MAYFAIR 8484
TELEX NO. 21431

CABLES VELOP, LONDON
TELEGRAMS: VELOP, LONDON, TELEX

CODE: BENTLEY'S SECOND

COLONIAL DEVELOPMENT CORPORATION

33 HILL STREET
LONDON W1

15th March, 1962

Mr Philip J. Squire,
International Bank for Reconstruction
and Development,
1818 H Street, NW,
Washington 25, DC,
USA

Dear Mr Squire,

Thank you very much for your letter of February 16th with enclosures about the additional work on the Kariba Dam south abutment. Your letter and the note of the August 14th meeting gives a very comprehensive picture of the steps which the Bank has taken to satisfy itself on the causes of the trouble and the adequacy of the remedial measures, and I am extremely grateful that you should have felt able to pass on all this information which covers entirely what I had in mind in writing to Mike Lejeune.

attached to Feb. 16/62 letter

RECEIVED
BENTLEY'S SECOND
15 MAR 1962

I myself was in Rhodesia three weeks ago and spent a day at Kariba. I was given to understand by Mr Ward that the Federal Power Board is satisfied with the progress of the work and, while I was not personally able to make any technical assessment I was told about Mr Hathaway's visit and that he had expressed himself as thoroughly satisfied with what was being done.

I shall look forward to seeing Mike Lejeune here next week since there are a number of things (unconnected with Kariba) which it would be useful to talk to him about.

Yours sincerely,

W. RENDELL
General Manager

COLONIAL DEVELOPMENT CORPORATION

33 HILL STREET
LONDON W1

15th March, 1962

Mr Philip L. Spence,
International Bank for Reconstruction
and Development,
1818 H Street, NW,
Washington 25, DC,
USA

Dear Mr Spence,

Thank you very much for your letter of February 14th with
enclosures about the additional work on the Kariba Dam south
abutment. Your letter and the note of the August 14th meeting
gives a very comprehensive picture of the steps which the Bank
has taken to assist itself on the causes of the trouble and the
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assessment I was told about Mr Hathway's visit and that he
expressed himself as thoroughly satisfied with what was

I shall look forward to seeing Mike Lejeune here next week
since there are a number of things (unconnected with Kariba)
which it would be useful to talk to him about.

Yours sincerely,

W. KENNELL
General Manager

RECEIVED
BANK MAIL ROOM
1962 MAR 19 AM 10:31



UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF COAL RESEARCH
WASHINGTON 25, D.C.

MAR 7 1962

Mr. S. Aldewereld, Director
Department of Technical Operations
International Bank for Reconstruction and Development
1818 H Street, N. W.
Washington 25, D. C.

Dear Mr. Aldewereld:

This will acknowledge your letter of February 27 enclosing Middle West Service Company's report on the power market of the Federation of Rhodesia and Nyasaland. I am returning the report in accordance with your request and greatly appreciate the opportunity you gave us to examine it.

Sincerely yours,

Bernard S. Beckler

Bernard S. Beckler
Chief, Division of Economics
and Marketing

Enclosures (2)

pt

GENERAL FILES
CORRESPONDENCE

MAR 8 9 03 AM 1962



MEMORANDUM FOR THE DIRECTOR

TO : SAC, [illegible]

FROM : [illegible]

SUBJECT: [illegible]

WVLS TAPS

RECEIVED
FEDERAL BUREAU OF INVESTIGATION
U. S. DEPARTMENT OF JUSTICE



March 1, 1962

Dr. D. T. Edmonds
Federal Power Board
P.O. Box 630
Salisbury
Southern Rhodesia

Dear Dr. Edmonds:

During my recent trip to Salisbury and Kariba I talked to you regarding a proposed meeting in Europe for the formation of an international organization which would be concerned principally with hydrology. I mentioned that Mr. W. B. Langbein had handed me some papers late in January and that I had not had an opportunity to read them, and therefore I was a bit hazy concerning the place and objectives of the meeting.

Following my return home, I have read these documents and find that they concern a resolution introduced by the U.S. Representative to UNESCO recommending that UNESCO convene an intergovernmental conference in 1963-64 to explore the ways in which member states might cooperate in developing coordinated international research and training programs in the field of scientific hydrology. This resolution was unanimously accepted by the UNESCO Executive Board and was welcomed by the Secretariat.

I am enclosing for your information the documents received from Mr. Langbein, having discussed the possibilities of your participation with him. He has also agreed to furnish me with additional copies. Mr. Langbein was informed of the Federal Power Board and your interest in hydrological problems. He stated that the Ad Hoc Panel on Hydrology, of which Mr. Langbein is Chairman, would welcome your cooperation, particularly from the viewpoint that up to the present there has been no representation in their international group from your section of the world. A copy of this letter is being forwarded to Mr. Langbein. Possibly you may wish to write to him outlining some of the studies and research that you now have under way in connection with Kariba Lake.

Sincerely yours,

Gail A. Hathaway
Engineering Consultant

March 1, 1962

Mr. W. B. Langbein
U.S. Geological Survey
Department of the Interior
Washington 25, D. C.

Dear Walter:

In accordance with our telephone conversation on February 28, I am forwarding to you copy of a letter to Dr. D. T. Edmonds, who is employed by the Southern Rhodesian Federal Power Board, with headquarters at P.O. Box 630, Salisbury, Southern Rhodesia.

Dr. Edmonds' home address is: 1 Roundhay Road, Cecil Road, Greendale, Salisbury. He, by the way, is a young man in his early thirties. No doubt you will be hearing from Dr. Edmonds soon and possibly you may also wish to drop him a line.

Sincerely yours,

Gail A. Hathaway
Engineering Consultant

Enclosure

GAH/agk

ROUTING SLIP		Date <i>May 1.</i>
NAME		ROOM NO.
<i>1. Mr. Spive</i>		<i>304</i>
<i>3. Files</i>		
<i>2 Mr. Spive ^{at}</i>		
		<i>[Signature]</i>
<input type="checkbox"/> To Handle	<input type="checkbox"/> Note and File	
<input type="checkbox"/> appropriate Disposition	<input type="checkbox"/> Note and Return	
<input type="checkbox"/> Approval	<input type="checkbox"/> Prepare Reply	
<input type="checkbox"/> Comment	<input type="checkbox"/> Per Our Conversation	
<input type="checkbox"/> Full Report	<input type="checkbox"/> Recommendation	
<input checked="" type="checkbox"/> Information	<input type="checkbox"/> Signature	
<input type="checkbox"/> Initial	<input type="checkbox"/> Send On	
REMARKS		
From		

INCOMING MAIL ROUTING SLIP		Date 3-1	
Mr. Black	1212	Mr. Lejeune	818
Mr. Broches	1004	Mr. Luzzatto	522
Mr. Calika	813	Mr. Mason	605
Mr. Cargill	621	Mr. McIvor	809
Mr. Cavanaugh	700	Mr. Mendels	1209
Mr. Chauffournier	519	Mr. Murick	1004
Mr. Clark	1004	Office of Info.	228
Mr. Collier	805	Office Services	1A4
Mr. Cope	818	Personnel Div.	207
Mr. Demuth	506	Mr. Poore	801
le Vries	515	Mr. Ramm	5A2
Mr. de Wilde	723	Mr. Reamy	7A7
Mr. Diamond	420	Mr. Rist	1120
Mr. Doucet	1209	Mr. Sagne	618
E. D. I.		Mr. Schmidt	420
Mr. Fajans	815	Mr. Stevenson	600
Mr. Goodman	500	Mr. Street	614
Mr. Goor	A311	Mr. Twining	508
Mr. Hauenstein	101	Technical Op.	309
Mr. Havlik	416	Translation	A318
Mr. Howell	801	Mr. Waern	810
Sir William Iliff	1212	Mr. Williams	815
Mr. Iverson	508	Mr. Wilson	600
Mr. Kheradjou	621	Mr. Worthington	7A15
Inapp	1212	Mr. Wheelock	511
Mr. Kruihof	608		

Remarks:

From: Communications Unit (Ext. 2023)



COMMONWEALTH DEVELOPMENT FINANCE
COMPANY LIMITED

1 UNION COURT
OLD BROAD STREET
LONDON E.C.2

CABLES: CODEFICO LONDON-EC2

TELEPHONE: AVENUE 9571

27th February 1962

Mr. S.R. Cope,
International Bank for Reconstruction
and Development,
1818 H Street N.W.,
Washington 25, D.C.

R. Nelson

145 RN

Dear Raymond,

Kariba ✓

Many thanks for your letter of 19th February and enclosures.

It is very reassuring to learn that the Bank consider that in principle the construction of a thrust-block is the proper solution to the problem and that further discussions between the Bank, their consultants and the consulting engineers to the Federal Power Board have strengthened this view.

You will undoubtedly be keeping a close watch on the progress of the remedial measures now being carried out and I shall be grateful if you will drop me a line if anything crops up that is likely to interfere with the programme.

Kindest regards,

Yours sincerely,

Stanley
A.S.G. Hoar

[Handwritten mark]

RECEIVED
BANK MAIL ROOM

1962 MAR -1 PM 1:04

...

...

...

[Faint, illegible handwriting]

February 26, 1962

Federal Power Board
Club Chambers
Baker Avenue
Salisbury
Southern Rhodesia

Gentlemen:

This is to acknowledge with thanks receipt of your letter dated February 15, 1962 with attached drawings relating to the proposed drainage scheme in conjunction with the south flank Kariba Dam work.

Sincerely yours,

Mario Piccagli
Acting Chief, Public Utilities Division
Department of Technical Operations

MP:abs
Incoming and File Copy
sent to Mr. Squire
Mr. Hathaway
Op. Files
cc: Div. File

RN-145

TELEPHONE: MAYFAIR 8484
TELEX NO. 21431

CABLES VELOP, LONDON
TELEGRAMS: VELOP, LONDON, TELEX

CODE: BENTLEY'S SECOND

COLONIAL DEVELOPMENT CORPORATION

33 HILL STREET

LONDON W1

1627/004X

21st February, 1962

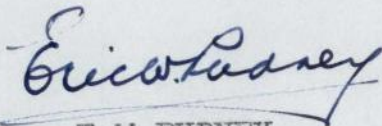
Mr P.J. Squire,
Assistant Director,
Technical Operations Department,
International Bank for Reconstruction
and Development,
1818 H Street, N.W.,
Washington 25, DC,
USA

Dear Mr Squire,

KARIBA

This is to thank you for your letter of 16th February addressed to our General Manager. Mr Rendell is overseas at the moment and I will see that this letter is brought to his notice immediately on his return.

Yours sincerely,



E.W. PUDNEY
for Controller of Operations

1885 FEB 20 AM 3:38

RECEIVED

RECEIVED
BANK MAN. ROOM

1962 FEB 26 AM 9:38

1962 FEB 26

FOR COMPTROLLER OF OPERATIONS
E.M. BODNIEL

[Handwritten signature]

YOURS SINCERELY,

to his notice immediately on his return.
at the moment and I will see that this letter is promptly
addressed to our General Manager. Mr. Bengel is overseas
This is to thank you for your letter of last February

KVBIBV

Dear Mr. Bodnial,

NSV
Washington 25, DC
1818 H Street, N.W.
and Development
International Bank for Reconstruction
Technical Operations Department
Assistant Director
Mr. P. J. Bodnial

1000004X

1000004X

LONDON MI

33 HILL STREET

COGNITION DELEGATION COGNITION

February 19, 1962

Dear Stanley,

KARIBA

As you know, Rendell of CDC wrote to Mike Lejeune on February 7[✓] about the "Report on Kariba Dam South Abutment, July 1961" asking whether we would let CDC and CDFC have the opinion given to us by the independent consultants we called in to consider this report.

I am enclosing a copy of a letter of February 16[✓] which Philip Squire has sent to Rendell, and also of the attachment to the letter giving an account of a meeting held at the Bank on August 14. I think you will find that these papers cover the background.

See letter of Aug-28/61

If there is any further information that you feel you need we shall, of course, be glad to do our best to supply it.

With best wishes,

Yours sincerely,

R

S. R. Cope
Director of Operations
Europe, Africa and Australasia

Enclosure

A.S.G. Hoar, Esq.
Managing Director
Commonwealth Development
Finance Company Limited
1 Union Court
Old Broad Street
London E.C. 2, England

cc: Mr. Squire

SNMcIvor:scp
Am

RN - 145

February 16, 1962

Mr. W. Rendell
General Manager
Colonial Development Corporation
33 Hill Street
London W1, England

Dear Mr. Rendell:

I am writing in reply to your letter of 7 February to Mike Lajeune in connection with the additional work now being undertaken on the Kariba Dam south abutment. Mike has had to go abroad on a mission but before going he asked me to include his regrets, with my own, that we have not written to you before now on this subject.

It is easy of course to be wise after the event and the only comment I would make on the question of confidence in the Board's Consulting Engineers is that they have shown a proper sense of responsibility in recommending remedial measures as soon as it was determined that the rock in the south abutment could not be successfully grouted to improve its strength.

The Bank agreed at the outset that in principle the construction of a thrust block was the proper solution of the problem. We wished to be satisfied, however, that both the design and the method of construction proposed were sound and we therefore retained Mr. Hammond, an eminent dam designer, and Mr. Burwell, a well-known geologist, to review the proposals and join us in discussions with the Consultants. The Consultants had made preliminary calculations of the resultant thrusts with the reservoir filled to various levels and on these they had based the design of the thrust block and supporting buttresses for the dam and had concluded that during the construction it would be safe to allow the reservoir to fill to an elevation of 1560 feet.

I enclose a note of a meeting held here on August 14 last year which will give you the background of our discussions and the various points which caused us concern. The trial load analyses referred to were carried out by Coyne & Bellier using

the Electricite de France computer and were completed in September last. They confirmed that the dam would be safe with a reservoir level at elevation 1560 but the resultant thrust with the reservoir full at elevation 1605 fell further downstream than originally calculated and necessitated a redesign of the buttresses. We are satisfied that the thrust block and buttresses as now designed will provide a sound solution. The program of construction finally agreed upon is as follows:

Buttress A1	Programmed Completion	25 Feb. 1962
Buttress A2	" "	5 Aug. 1962
Buttress B	" "	5 May 1962
Buttress C	" "	20 April 1962

We had Mr. Hathaway visit the site at the beginning of this month. He reports that the work is going well although on one of the four buttresses it is slightly behind schedule due to shortage of miners. Additional miners have been brought in and it is hoped that the delay will be overcome.

If you need any further information, please do not hesitate to let me know.

Yours sincerely,

Philip J. Squire
Assistant Director
Technical Operations Department

Enclosure

PJSquire:GAHathaway:am

cc: Messrs. McIvor, Hathaway and Piccagli

KARIBA

Minutes of Meeting Held on August 14, 1961

Present: Messrs. Aldewereld)		Messrs. Paton - Sir Alexander Gibb
Hathaway)		and Partners
Spottswood)	Bank	Hammond)
Piccagli)		Burwell)
Squire)		Consultants

Mr. Paton reported that representatives of Gibb, Coyne, Sogei had had two meetings with the Contractors, one in Milan on August 5 and one in London on August 10 and 11. Satisfactory agreement had been reached on the detailed method of doing the work, the rates for the work and the program. The Contractors' cost estimates were between 5% and 7% lower than the estimate prepared by Gibb and given to the Power Board. A draft extension to the existing contract with Impresit was ready for submission to the Board.

Work had started on the grout curtain which should be finished by the end of October and this would be followed by the concrete wing wall which should be finished by mid-December. Work had also been released on the two shafts for the upstream buttresses B and C. In accordance with the program, the concreting of the buttresses would be completed as follows:

- A1 - end January 1962
- A2 - April 10, 1962
- B - June 10, 1962
- C - April 10, 1962

Mr. Burwell thought this was a tight schedule, bearing in mind the confined working space, but Mr. Paton explained that the timing of the work was based on the actual excavation and concrete filling of the mica seam which was now completed down to elevation 1500.

The question was raised concerning the safety of the dam with the reservoir level at elevation 1560 and allied with this was the method of excavation for and construction of, the buttresses which form part of the gravity thrust block. The discussion also related to possible increased hazards involved in excavation and construction of the gravity thrust block with a reservoir level at or near elevation 1560. Mr. Paton explained that the water level of the reservoir was now elevation 1548. The 1962 flood season could be expected between about mid-February and May or June, and even if the maximum flood of record was experienced the reservoir level would only reach about elevation 1560.

Mr. Hammond emphasized the necessity of determining the resultant angle of thrust, i.e., the resultant of the cantilever action from the water load on the respective blocks being analyzed when combined with the resultant

thrust from the arch action. His concern was with respect to that portion of the dam between joints 30 and 34 (i.e., blocks 30/32 and 32/34) which are seated on sound gneiss and in the calculations are assumed to be acting as an abutment block to withstand thrusts from the upper part of the dam when the water level is 1560. Mr. Hammond stated that in his opinion the resultant thrust of these two loads would fall in the downstream section of blocks 30/32 and 32/34. The exact location of the resultant thrust for the two blocks could only be determined by means of trial load analysis.

Mr. Paton undertook to cable immediately in order to ensure that the trial load analysis both for elevation 1560 and 1605 would cover this. He pointed out that no account had been taken in the preliminary calculations of the blocks beyond joint 34. Although these blocks rested on quartzite they would, nevertheless, contribute to the stability of the dam.

Mr. Hathaway asked whether it would be practicable to lower the reservoir level if the results of the trial load analysis show that it would be unsafe to operate at elevation 1560. Mr. Paton was confident that the analysis would confirm his preliminary calculations which were made on a conservative basis. He further stated that no problem for power generation would arise if the reservoir were lowered to elevation 1540. The jets from the spillway would, however, fall close to the downstream toe, beyond the narrow mattress that has been provided to protect the foundation. He agreed that he would give some further thought to this eventuality and would prepare a plan to be followed in the event that the trial load analysis demonstrated that blocks 30/32 and 32/34 cannot be utilized as an abutment block to withstand thrusts from the upper part of the dam when the water level is at elevation 1560.

Regarding the method of excavation and concreting of the underground portion of the thrust block which would be in the form of buttresses, Mr. Paton explained that the two upstream buttresses would be excavated and concreted from two shafts and a number of adits. This was being adopted as a safety measure to avoid any direct passage for the water round the edge of the dam should a weak zone be encountered. The two downstream buttresses would be excavated and concreted from downstream adits.

In each of the buttresses construction adits would be provided at various levels, the vertical distance between each adit being about 40 feet. The work would be divided into seven or eight zones and the rock would be removed and replaced with concrete in alternate zones to reduce the ground opened up at any one time to a minimum.

The excavation would be done downwards between consecutive adits for a length of approximately 40 to 50 feet in each zone. The excavation would be in 6 to 7 foot lifts, each lift being concrete lined and the lining and rock face held by reinforced concrete struts at 15 to 20 foot centers before proceeding with the excavation in the next lift below. When the excavation reached the next adit about forty feet below the entire open space would be filled with mass concrete before proceeding with the work in the adjoining zone. On completion of the buttresses the contact faces would be grouted under low pressure.

Mr. Hammond and Mr. Burwell queried the support of the exposed rock as the excavation proceeded and expressed the view that the stoping (underground excavation) should take place from the bottom upwards. Mr. Paton explained that the Contractors preferred the proposed method of construction which they felt would give them better overhead protection. The method proposed was the same as that used in excavating and concreting the mica seam and he did not think any insurmountable difficulties of the sort envisaged by Messrs. Hammond and Burwell would arise. He undertook, however, to discuss this question further with the Contractors.

On the question of design Mr. Paton said that the rockfill in the upper part of the gravity block was now abandoned in favor of concrete. This permitted a small reduction in the upper dimensions of the block and had the advantage of allowing the whole block to be tied firmly to the dam with the prestressed steel cables.

With regard to the concrete in the underground portion of the thrust block Mr. Paton confirmed that the buttresses had been located so that the lower portions up to the contact with the underside of the dam were excavated through the quartzite into the gneiss. The more detailed drawings now being prepared would bring out this point.

It was still proposed, however, to leave the two ribs of quartzite between the buttresses under the block. Messrs. Hammond, Burwell and Hathaway felt strongly that these should be removed and replaced with concrete. Mr. Paton pointed out that these quartzite inclusions made no contribution to the support of the block and that their removal and replacement with concrete would only add unnecessarily to the cost of the work.

On the question of leakage, Mr. Paton was relying on the grout curtain for water-tightness. This would be taken down to elevation 1350 and although it could not be guaranteed that there would be leakage, he was confident that it would not be more than could be handled by the well points which would be provided behind the curtain. Mr. Burwell and Mr. Hathaway queried the stability of the wing wall. With the rockfill behind the wall there might well be danger of slide failure under conditions of maximum draw-down and the necessity of good foundations for the wall was stressed. Mr. Paton said that the design of the wall had not yet been finalized and he would see that these comments were taken into account. In conclusion it was agreed that the two trial load analyses were essential to confirm the approximate calculations on the stability of the dam and thrust block at the South Abutment. Mr. Paton promised to send to the Bank more detailed drawings of the scheme, both in its final design and in the various stages of construction. He will also send complete record drawings of the dam as completed to date.

August 28, 1961

ROUTING SLIP

Date

Feb 26

NAME

ROOM NO.

Mr. Saffari

305

~~Mr. Mackaway GAH.~~

3A2

Op. Files

8A4

To Handle

appropriate Disposition

Approval

Comment

Full Report

Information

Initial

Note and File

Note and Return

Prepare Reply

Per Our Conversation

Recommendation

Signature

Send On

REMARKS

From

Mario Piccagli

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. Box 630

TELEPHONES: 25958
20556
29231/2/3

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

C.2/Var/7

CHANGE OF ADDRESS

From Monday, 12th February, 1962,
the Board's offices move to

CLUB CHAMBERS, BAKER AVENUE,
SALISBURY.

The Post Office Box number remains unchanged.
Telephone Numbers change to 29231 (5 lines).

The International Bank for
Reconstruction & Development,
1818 H Street, N.W.,
WASHINGTON 25, D.C.,
U. S. A.

15th February, 1962

Dear Sirs,

KARIBA HYDRO-ELECTRIC SCHEME

LOAN NO. 145.RN

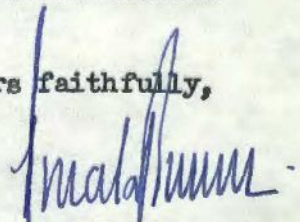
....
....

Enclosed are copies of drawings Nos. 3301/2195.A
and 3301/2196.A indicating the proposed drainage scheme
to be carried out in conjunction with the additional
work at the south flank of Kariba Dam. These drawings
should be read in conjunction with the report on the
stability of the south bank, of which I understand you
have a copy.

The cost of the work does not represent an additional
expenditure, since it has already been included in the
estimates.

The Board has approved the carrying out of the work,
with the proviso that the need for any extension of the
drainage gallery (Adit "B.1"), the power station and the
lake beyond the centre line of No. 3 machine, must be
thoroughly proved and reported upon before it is carried
out.

Yours faithfully,


SECRETARY

ENCLS. drc Kariba #104

PWB/PNE

acc. Feb 26/62

you
RW-1145

OFFICE MEMORANDUM

TO: Mr. S. Aldewereld

DATE: February 15, 1962

FROM: G.A. Hathaway *GAH*.

SUBJECT: Kariba Dam - Construction of Right Abutment
Thrust Block and Buttresses

The work now in progress in connection with the construction of a thrust block and four underground buttresses to carry the thrust of Kariba dam to sound rock in the right abutment was inspected on February 5 and 6, 1962. It is an extremely complicated and difficult job because most of the excavated material and the placement of the concrete for buttresses "B" and "C" must be made by means of two vertical shafts. Access to buttress "A" is through a horizontal tunnel at about elevation 1390 from downstream of the dam. The work is being carried forward by means of several horizontal adits at three main working levels. Although the upstream cutoff wall and grout curtain has been completed and appears to be functioning satisfactorily, nevertheless there is a considerable amount of water in the underground adits and shafts.

At the time of my visit IMPRESIT was employing 83 Europeans and 709 Africans on the job. Included in the total of 83 Europeans employed by IMPRESIT were 8 key staff members such as engineers, superintendents, foremen, etc., and 42 miners of which 10 had just recently arrived from Italy. I was informed that the 709 Africans were a special group of experienced underground workers that were brought in from a mining area near the Southern Rhodesia - Portugese Angola border.

The contractor's representative and Mr. John Corney, resident engineer for Gibb, Coyne, Sogei, Ltd., estimated that the downstream thrust block which will have a total of 30,000 cu.yds. of concrete is slightly over 50% complete with about 15,400 cu.yds. in place. The so-called thrust block as distinguished from the four buttresses is located on the right abutment along the downstream slope of the dam and will be tied into the main dam structure by means of prestressed cables. The thrust block has been added primarily for weight and very little of it is resting on the deep lying sound gneiss. However, the foundation of all four of the buttresses which take the direct thrust from the dam are seated on sound gneiss rather than weathered quartzite.

The work is now being concentrated on buttresses "A.1" and "C" which are about 30% complete. Some work has been done on buttress "B". At the time of my inspection 880 cu.yds. of concrete had been placed in buttress "B", 2,800 cu.yds. in "C" and 2,820 cu.yds. in "A.1". Progress on excavation and placement of concrete in "A.1" is behind schedule. Progress on buttress "B" is slightly ahead of schedule and in general work on "C" is in line with their latest program. Work on buttress "A.2" is not scheduled to start until March 1962.

The principal objective at the present time is to complete buttresses "A.1" and "C" by March 15, 1962, to the point where at least part of the major thrust for a reservoir elevation of 1560 would be carried through the weathered quartzite to sound gneiss located at elevations 1345 and 1430 respectively. Portions of buttresses "A.1" and "C" are located under and will be supporting existing blocks of the dam. Buttress "A.1" is designed to carry the downstream component of the thrust from the arch in accordance with the results of the trial load analysis. The representatives of the consulting engineers and the contractor were quite confident that the March 15 deadline would be met.

Because of heavy rainfall over the Southern Rhodesian portion of the Zambezi basin around the middle of January it was necessary for the Federal Power Board to release 728,000 acre feet from storage through the spillway gates during the period January 26 to 31, inclusive. The rates of discharge during that period reached as high as 100,000 cu.ft. per second. In addition to this amount a volume of 160,000 acre feet was released during the period September 13 to 16, inclusive, in connection with special tests on the spillway gates. The January releases were made as a precaution so as to stay within a rule curve designed to prevent Kariba Lake from exceeding an elevation of 1560 feet during the 1962 flood runoff season. The main flood from the Upper Zambezi basin is not due to arrive until April and there are no indications up to the present time that the runoff will be particularly heavy. The lake level on the morning of February 7 was 1550.75 and an additional rise of 10 feet in the reservoir is expected with due allowance for the normal release of about 15,000 c.f.s. through the turbines.

Inspection of the excavation and rock beneath the blocks of the existing dam was a most unusual experience. Much of the weathered quartzite beneath the dam and adjacent to the blocks in the right abutment was so badly deteriorated that it could easily be crumbled by hand. Excavation of the different cells provided an opportunity to observe what remained of numerous grout holes in the side walls of the excavation and in practically every case the evidence indicated that the grout failed to penetrate appreciably the weathered quartzite.

Special inquiry was made concerning observations being made to detect any possible movement in the dam. Included in the dam and foundation are 550 strain meters for detection of unusual stress or movements within the structure and foundation, also there is a system of geodetic triangulation points by which checks are made at specific points on the dam to measure the deflections resulting from the increase in water load. Precise levels are also made along the top of the dam. The geodetic triangulation and leveling for a check of the precise level and geodetic triangulation points is made every two months or for a rise in elevation of the reservoir surface of 10 ft. in the event that a 10 ft. change in water surface occurs in less than two months. The readings on the strain meters are made at more frequent intervals.

In discussing the frequency of these readings with Mr. John Corney, resident engineer for the consultants, and Mr. Bruce of the Federal Power Board, I made the observation that during the critical period of excavation and loading of the dam such as is occurring at the present time, the Board and/or consultants might be well advised to obtain more frequent readings of the strain meters as well as checks on the key points of the dam by means of the geodetic triangulation to be sure that any unusual movement of the dam or abutment would be detected immediately.

The question of frequency of measurements was later discussed with Mr. Ward, Chairman of the Board, and Mr. Peterson, General Manager of the Federal Power Board. My comments were not submitted as recommendations but only as an observation. Mr. Peterson informed me that the question of obtaining more frequent measurements would be taken up at once with the Power Board's consulting engineers and that the Bank would be informed of the results of these discussions.

cc: Mr. Squire
Mr. Spottswood
Mr. McIvor (2)

GAH/hd

February 14, 1962

Mr. W. Rendell
General Manager
Colonial Development Corporation
33 Hill Street
London W1, England

Dear Bill:

✓
Thank you for your letter of February 7. I am about to leave for a visit to New Zealand and have handed your letter to those concerned in the Bank. You will be hearing from us before long.

I hope all goes well with you. I expect to be in London about March 19 and will call you then.

Yours sincerely,

Michael L. Lejeune
Assistant Director of Operations
Europe, Africa and Australasia

SNMcIvor:eb

plm

February 7, 1962

George R. Peterson, Esq.
General Manager
Federal Power Board
P.O. Box 630
Salisbury, S. Rhodesia

Dear George,

Thank you for your letter of 2 February
enclosing the January report on the South Abutment
work.

I note that progress has improved although
the work is still slightly behind the original pro-
gram.

Yours sincerely,

Philip J. Squire
Assistant Director
Technical Operations Department

PJS:mec

C
O
P
Y

COLONIAL DEVELOPMENT CORPORATION
33 Hill Street
London W1

7th February, 1962

Mr. M. L. Lejeune,
International Bank for Reconstruction
and Development,
1818 H Street, NW,
Washington 25, DC, USA

Dear Mike:

KARIBA

We have been giving a great deal of thought to the situation disclosed by the Federal Power Board's Consulting Engineers' "Report on Kariba Dam South Abutment, July 1961".

The disclosures in the Report suggest that the original site investigation was less thorough than it ought to have been; a circumstance which cannot fail to raise the question of confidence in the Board's Consulting Engineers and puts us on enquiry as to the adequacy of the remedial measures recommended by them.

We understand that, before deciding to adopt the recommendations in the Report, the Board consulted the Bank and the Bank in turn called in independent consulting engineers who, after studying reports and meeting the Board's Engineers, endorsed the recommendations in the Report.

In view of the complete identity of interest between the Lenders in this matter, would you be willing to disclose to us and to CDFC, in agreement with whom I am writing this letter to you, the opinion given to you by the independent consultants whom you called in?

Yours sincerely,

(signed)

W. RENDELL
General Manager

acc. Feb. 14/62

INCOMING MAIL ROUTING SLIP			Date	2-9
Mr. Black	1212	✓	Mr. Lejeune	818
Mr. Broches	1004		Mr. Luzzatto	522
Mr. Calika	813		Mr. Mason	605
Mr. Cargill	621		Mr. McIvor	809
Mr. Cavanaugh	700		Mr. Mendels	1209
Mr. Chaufournier	519		Mr. Murick	1004
Mr. Clark	1004		Office of Info.	228
Mr. Collier	805		Office Services	1A4
Mr. Cope	818		Personnel Div.	207
Mr. Demuth	506		Mr. Poore	801
de Vries	515		Mr. Ramm	5A2
de Wilde	723		Mr. Reamy	7A7
Mr. Diamond	420		Mr. Rist	1120
Mr. Doucet	1209		Mr. Sagne	618
E. D. I.			Mr. Schmidt	420
Mr. Fajans	815		Mr. Stevenson	600
Mr. Goodman	500		Mr. Street	614
Mr. Goor	A311		Mr. Twining	508
Mr. Hauenstein	101		Technical Op.	309
Mr. Havlik	416		Translation	A318
Mr. Howell	801		Mr. Waern	810
Sir William Iliff	1212		Mr. Williams	815
Mr. Iverson	508		Mr. Wilson	600
Mr. Kheradjou	621		Mr. Worthington	7A15
Knapp	1212		Mr. Wheelock	511
Mr. Kruithof	608			

Remarks:

COLONIAL DEVELOPMENT CORPORATION

33 HILL STREET
LONDON W1

7th February, 1962

Mr M. L. Lejeune,
International Bank for Reconstruction
and Development,
1818 H Street, NW,
Washington 25, DC, USA

Dear Mike,

KARIBA

We have been giving a great deal of thought to the situation disclosed by the Federal Power Board's Consulting Engineers' "Report on Kariba Dam South Abutment, July 1961". *← doc. Kariba #98*

The disclosures in the Report suggest that the original site investigation was less thorough than it ought to have been; a circumstance which cannot fail to raise the question of confidence in the Board's Consulting Engineers and puts us on enquiry as to the adequacy of the remedial measures recommended by them. #

We understand that, before deciding to adopt the recommendations in the Report, the Board consulted the Bank and the Bank in turn called in independent consulting engineers who, after studying reports and meeting the Board's Engineers, endorsed the recommendations in the Report.

In view of the complete identity of interest between the Lenders in this matter, would you be willing to disclose to us and to CDFC, in agreement with whom I am writing this letter to you, the opinion given to you by the independent consultants whom you called in?

Yours sincerely
William Rendell
W. RENDELL
General Manager

22 Feb 1962

RN-6145

Form No. 27
(7-61)

INTERNATIONAL DEVELOPMENT
ASSOCIATION

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL FINANCE
CORPORATION

OUTGOING WIRE

TO: PETERSON
HYDRO
SALISBURY

MRT

DATE: JANUARY 26, 1962

CLASS OF
SERVICE: LT

COUNTRY: SOUTHERN RHODESIA

TEXT:
Cable No.:

Personal

FURTHER MY LETTER JANUARY TWENTY FOUR HATHAWAY NOW SCHEDULED
ARRIVE SALISBURY THREE FEBRUARY LEAVE EIGHT FEBRUARY STOP
GRATEFUL YOU MAKE HOTEL RESERVATION REGARDS

SQUIRE

INTBAFRAD

NOT TO BE TRANSMITTED

MESSAGE AUTHORIZED BY:

NAME P. J. Squire

DEPT. Technical Operations

SIGNATURE *P. J. Squire*
(SIGNATURE OF INDIVIDUAL AUTHORIZED TO APPROVE)

PJS:mec

ORIGINAL (File Copy)

(IMPORTANT: See guide for preparing form)

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Checked for Dispatch: _____

B

INSTRUCTIONS TO THE ADDRESSEE (REV. 1-1-62)

Check for Delivery

ORIGINATOR (R# C#)

FOR USE BY ADDRESSEE ONLY

5:30:00

SIGNATURE OF INDIVIDUAL AUTHORIZED TO SIGNATURE DISPATCHED

REPLY Description of Contents

GENERAL FILES CORRESPONDENCE

NAME P. T. ...

JAN 26 2 30 PM 1962

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SEARCHED

ORIGINATOR FOR MAKE HOTEL RESERVATION SERVICES
VENUE SCHEDULED THREE FEBRUARY 1962 EIGHT FEBRUARY 1962
LATER IN THE YEAR 1962 LATELY FOR THE YEAR 1962

Copy No:

TEXT:

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SERVICE: PL
CLASS OF

DATE: ...

OUTGOING MAIL

ASSOCIATION

INTERNATIONAL DEVELOPMENT

REGISTRATION AND DEVELOPMENT

INTERNATIONAL BANK FOR

COOPERATION

INTERNATIONAL FINANCE

1962

GENERAL MANAGER'S OFFICE
TELEPHONE 29231

FEDERAL POWER BOARD,
P. O. BOX 630,
SALISBURY,
S. RHODESIA.

2nd February, 1962.

Philip J. Squire, Esq.,
International Bank for Reconstruction
& Development,
1818 H Street, N.W.,
Washington. 25. D.C.

Dear Philip,

Thank you for your letter of January 24th, ^(personal letter)
which gives me exactly the information I wanted about the
Bank's organisation.

While I am writing to you I am taking the ^{in P.R. report file.}
opportunity of attaching the Progress Report on the South
Abutment work for January. You will see from this that
progress has improved, although it has not yet quite caught
up with the original programme. Incidentally, the programme
itself is being somewhat rearranged to suit site conditions, and
we will be able to explain this in detail to Hathaway when he
visits the site next week.

I received a cable from him saying that he
would be arriving in Salisbury tomorrow, but, unfortunately,
he did not mention his flight number. On the assumption
that he is coming from the North I am arranging to meet all
the major south-bound planes in the hope of seeing something
of him before he departs for Kariba on Sunday. I have arranged
for our Chief Civil Engineer to accompany him on his visit and
to give him all the information he requires.

Hope to see you in Melbourne

ack'd 2/7/62 - PJS

Yours

John Peterson

ack. Feb. 7/62

M. Stone Files - 894

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

INCOMING WIRE

INTERNATIONAL FINANCE CORPORATION ³⁰⁵

DATE OF WIRE: FEBRUARY 1, 1962 1054

LOG NO.: WU 11

TO: INTBAFRAD

FROM: BAIRE

TEXT:

ROUTING

ACTION COPY: TECHNICAL OPERATIONS

INFORMATION

COPY:

DECODED BY:

[Handwritten signature and scribbles]

✓
ALDEWERELD REF BEARD MERZ LETTER 19TH JANUARY WILL CONTACT YOU ON
ARRIVAL WASHINGTON AFTERNOON TUESDAY FEBRUARY 6TH

POWELL

ORIGINAL

AB

TYPED

GENERAL FILES
CORRESPONDENCE

FEB 2 9 38 AM 1962



Karuba

January 25, 1962

Mr. Alan E. Powell
Merz and McLellan
Bouchard 6th, 3er. Piso
Buenos Aires, Argentina

Dear Mr. Powell,

✓ Jan 19/62

I have received a letter from Mr. J. R. Beard advising me that you have taken over from him as senior partner of Merz and McLellan. Mr. Beard told me of your visit to Buenos Aires and his suggestion that you should call in to see us on your way back to England. I would of course be delighted to see you and to introduce you to some of our people here, and perhaps you would cable me telling me when to expect you.

With kind regards,

Yours sincerely,

S. Aldewereld
Director
Technical Operations Department

PERSONAL

DECLASSIFIED

January 25, 1962

JAN 31 2019

WBG ARCHIVES

Mr. James R. Beard
Merz and McLellan
Milburn, Esher
Surrey, England

Dear Mr. Beard,

✓ I very much appreciate your letter of January 19, advising me of your retirement from the partnership as from the first of January. I am very glad indeed this does not mark the end of your distinguished career and that you will be continuing your association with the firm as consultant.

We would of course be very pleased to see Mr. Powell who succeeds you as senior partner and I have today written to him in Buenos Aires to tell him so. I will of course do my best to arrange for him to meet the people he should when he is here.

With kindest regards and the best of good wishes,

Yours sincerely,

S. Aldewereld
Director
Technical Operations Department

MERZ AND McLELLAN

CONSULTING ENGINEERS

ALAN E. POWELL, M.I.C.E., M.I.MECH. E.
 ARTHUR HOWELL, M.I.MECH. E., M.I.E.E.
 CHARLES L. BLACKBURN, M.I.E.E.
 E. LEWIS E. WHEATCROFT, M.I.MECH. E., M.I.E.E.
 HAROLD J. BEARD, M.I.E.E.
 WILLIAM H. DIXON, M.I.MECH. E., M.I.E.E.
 WILSON W. CAMPBELL, M.I.MECH. E., M.I.E.E.
 ARTHUR W. PEDDER, M.I.MECH. E., M.I.E.E.
 THOMAS W. WILCOX, M.I.E.E., MEM. A.I.E.E.

CONSULTANTS

JAMES R. BEARD, C.B.E., M.I.C.E., HON. M.I.E.E., FEL. A.I.E.E.
 T. GRAEME N. HALDANE, M.I.C.E., M.I.E.E., FEL. A.I.E.E.
 FREDERICK C. WINFIELD, M.I.E.E., FEL. A.I.E.E.
 SIR JOHN HACKING, M.I.E.E.
 DR. ALBERT PARKER, C.B.E., F.R.I.C., M.I.CHEM. E., M.I.GAS. E.

BY AIR MAIL

ALSO
 32, VICTORIA STREET, LONDON, S.W.1.
 AND
 CARLIOL HOUSE, NEWCASTLE UPON TYNE 1

TELEX: 53224 (ALL OFFICES)

YOUR REFERENCE

OUR REFERENCE JRB/CM

Karuba file - sent
 MILBURN,
 ESHER,
 SURREY.

TELEGRAMS: AMBERKRAFT ESHER
 TELEPHONE: ESHER 2345

19th January, 1962
 (Friday)

MR. S. ALDEWERELD,
 Director, Department of Technical Operations,
 International Bank for Reconstruction and Development,
 1818 H Street, N.W.
 WASHINGTON, 25, D.C.,
U. S. A.

Dear Mr. Aldewereid,

A little while ago we sent out a notice regarding our partnership which may quite possibly not have come to your attention. This was to announce my intention to retire from the partnership as from the 1st January this year and to advise that Mr. Alan E. Powell would be taking over from me as senior partner from that time. My partners very kindly suggested that they would like me to continue to keep in touch with what was going on and asked me to accept an appointment as Consultant for the next few years. This I was very pleased to do, as although I realise I have reached an age when I must slow down a bit I am still interested in the firm's activities.

Mr. Powell tells me that he does not think he has yet met you and this is quite possible as hitherto he has not been concerned with that side of our work and has been in our Newcastle Office in

RECEIVED

022 Jan 25/62

RECEIVED
BANK MAIL ROOM

04 10 22/02

1962 JAN 22 AM 9:05
Mr. Bennett tells me that he does not think he has yet met
what you mean & that I am still interested in the film, a statement
because he is a director I realize I have learned in the mean I
arrangement as consultant for the next few years. That I was left
to keep in touch with what was going on and asked me to accept in
business left quickly arranged that they would like me to continue
month or taking over from me as senior partner from that time. My
from the fact finally that year and to advise that Mr. Alan B. Bennett
that was to announce my intention to leave from the partnership as
partnership which will quite possibly not have come to your attention.

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what you mean & that I am still interested in the film, a statement

because he is a director I realize I have learned in the mean I

arrangement as consultant for the next few years. That I was left

to keep in touch with what was going on and asked me to accept in

business left quickly arranged that they would like me to continue

month or taking over from me as senior partner from that time. My

from the fact finally that year and to advise that Mr. Alan B. Bennett

that was to announce my intention to leave from the partnership as

partnership which will quite possibly not have come to your attention.

A letter will be sent out a notice regarding this.

Dear Mr. Videmann:

P. S. V.

WASHINGTON, D. C.

1962 JAN 22 AM 9:05

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

Director, Department of Economic Operations

MR. S. VIDEMANN

OSCAR W. BARKER, SVP
JIMMY H. BARKER, VP
EDWARD C. MILLER, VP
JAMES H. BEARD, SVP
CONTRIBUTORS
THOMAS M. MURPHY, VP
ALAN B. BENNETT, VP
MILTON H. DIXON, VP
HAROLD J. BEARD, VP
E. GEORGE S. MURPHY, VP
CHARLES T. MURPHY, VP
ALAN B. BENNETT, VP
ALAN B. BENNETT, VP

OUR REFERENCE: 100/100
YOUR REFERENCE:

TELEX: 23534 (ATTN OFFICER)

CABLES: HOUSE, NEWCASTLE FROM LINE 1
AND
35 VICTORIA STREET LONDON SW1
1962

(1/2/62)
1962 JAN 22 AM 9:05

TELEPHONE: 6366 2342
TELEGRAMS: UNDEKRYVET 6366

23534

6366

MURPHY

CONSULTING ENGINEERS

WEBB AND MCGEGAN

BY AIR MAIL

Handwritten signature and notes at the bottom right of the page.

19/1/1962

Mr. S. Aldewereld,
International Bank for Reconstruction
and Development

charge of specific jobs like Blyth and the Chapelcross Station which we did for the U.K. Atomic Energy Authority. He has also been in charge of the work we are doing for the B.T.H.-I.C.L. Partnership for their large new station in Buenos Aires.

However, he has now transferred to London and will naturally be concerned with the partnership business as a whole including that important section of it concerned with negotiations with prospective clients and, of course, with the World Bank on schemes where the client is negotiating or making use of World Bank loans.

You may perhaps be a little surprised that Mr. C.L. Blackburn whom you know quite well, has not taken over from me but he felt at his age (60 which seems to me relatively young !) he did not wish to get involved in the general administration of the firm and the multifarious responsibility which falls to the senior partner's lot. Accordingly he is taking things relatively easily although we are all pleased that he is continuing as a partner and is actively interested in our work.

I am sorry to inflict all this explanation on you but I felt it desirable that you should know at first hand the changes which have been taking place in the firm's arrangements.

I am particularly spurred to do so by the fact that

19/1/1962

Mr. S. Aldewereld,
International Bank for Reconstruction
and Development

Mr. Powell has been very much concerned in recent months with the changes which are taking place in the Buenos Aires power situation under the aegis of the World Bank and he felt that it was desirable to make an early visit to Buenos Aires so that the outstanding matters could be fully discussed. He is accordingly flying there early next week. I suggested to him and he agreed that it was most desirable that on his way back he should call on the World Bank and make the acquaintance of yourself and other senior officers, particularly I would very much appreciate if you could arrange for him to meet Sir William Iliff. Although he has met your deputy, Mr. Philip Squire, once or twice he does not know him well but this is doubtless because it just so happened that his work in Newcastle has not brought him in touch with Mr. Squire. There are no doubt many others whom you will feel it is useful for him to know and perhaps you would be kind enough to make the necessary arrangements. I hope you yourself will be there but if not you will no doubt be able to make suitable arrangements for Mr. Powell's visit. I have suggested to him that when he is clear as to when he will be free to visit Washington he should get in touch with your office either by cablegram or telephone as may be most convenient. If you care to drop him a note, his address in Buenos Aires will be :-

Merz and McLellan,
Bouchard 644, 3er. Piso, Buenos Aires

19/1/1962

Mr. S. Aldewereld,
International Bank for Reconstruction
and Development

I frequently see our mutual friend, Edgar Wilkinson, who is, I am glad to say, in quite good form. As you know my wife and I have a regular Bridge evening with the Wilkinsons of which records are meticulously kept. I am sorry to say that in 1961 we were slightly in the red !

With all good wishes for 1962

Yours sincerely,

James McSeard

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

ROUTING SLIP

Date

16/1/62

NAME

ROOM NO.

~~Mr. [unclear]~~

301

Op Files

To Handle

Note and File

Appropriate Disposition

Note and Return

Approval

Prepare Reply

Comment

Per Our Conversation

Full Report

Recommendation

Information

Signature

Initial

Send On

REMARKS

From

OFFICE MEMORANDUM

TO: Mr. A.D. Spottswood

FROM: G.A. Hathaway

SUBJECT: Kariba Hydroelectric Scheme - Loan 145 RN

DATE: January 16, 1962

← document Kariba #102

I have reviewed the working drawings and note on design of the south abutment thrust block for the Kariba Hydroelectric Scheme contained in a pamphlet dated November 1961, (Gibb, Coyne, Sogei, Consulting Engineers) and Contract No. C.2 (Extension), General Conditions of Contract, Specification and Bill of Quantities.

I have no comment to make on the Working Drawings and Note on Design as the drawings are in general agreement with those reviewed by the Bank's staff and Consultants Hammond and Burwell. The results of the trial load analysis indicated that the abutment block should be rotated into a position where the axis of the massive central buttress (buttress A.2 and B) would be in a position to better receive the resultant of the thrust from the dam. The note on design does indicate that a comprehensive drainage scheme is planned in conjunction with the thrust block to insure removal of any pressures in the rock adjacent to and under the block. The drawings showing the drainage scheme have not been submitted to the Bank.

- with H.E. Vanheyen.

The General Conditions of Contract, Specification and Bill of Quantities for Contract No. C.2 (Extension) is an extension of the main civil engineering contract (No. C.2) for the Kariba Hydroelectric Scheme which has been modified during negotiations with Impresit, the Contractor for the construction of the thrust block. General Conditions of Contract, Specification and Bill of Quantities have been agreed upon between the Federal Power Board and the Contractor and I assume that this document has been forwarded to the Bank for information only. No comment appears necessary or desirable.

GAH/hd

cc: Messrs. Aldewereld/Squire
Mr. Marshall with documents ✓

January 12, 1962

Federal Power Board
Reliance House
Moffat Street
Salisbury, S. Rhodesia

Re: Loan 145 RN

Gentlemen:

We appreciate your sending us the revised priced Contract Document for the construction of the south abutment thrust block at Keriba. We are reviewing the set of drawings which were also included with your letter of December 22, 1961 (C4/VAR/7(46)).

If, after our review, we have any comments we will write you further.

Sincerely yours,

A. D. Spottswood
Chief, Public Utilities Division
Department of Technical Operations

cc: Mr. Hathaway
Div. Files

LGMarshall:ls

January 10, 1962

Federal Power Board
Reliance House
Moffat Street
Salisbury, Southern Rhodesia

Dear Sirs:

Loan Agreement No. 145 RN
Kariba Hydro-Electric Project
Installation of Third Transformer at Kitwe

Thank you for your letter of December 27, 1961 asking for our approval to the proposal to install a third transformer and ancillary equipment at Kitwe. We have read with interest your intention regarding financing this installation and your arrangements for increased sales of power to the Rhodesia Congo Border Power Corporation.

We assume that you have consulted the other lenders to the extent required under your agreements with them, and on this assumption we are glad to give you our approval to your proposals.

For their information we are sending copies of this letter to the Colonial Development Corporation and the Commonwealth Development Finance Company Limited.

Yours sincerely,



S. R. Cope
Director of Operations
Europe, Africa and Australasia

Cleared with and copies to:
Messrs. Piccagli
Bateson
Verheyen
CDC
CDFC

SNMcIvor:ang



INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

ROUTING SLIP		Date
		Jan. 12
NAME		ROOM NO.
Mr. Prangli		300
Batesen		10 A 2
files		8A8

To Handle	Note and File
Appropriate Disposition	Note and Return
Approval	Prepare Reply
Comment	Per Our Conversation
✓ Full Report	Recommendation
Information	Signature
Initial	Send On

REMARKS

From N. McIVOR

RN-21145

COLONIAL DEVELOPMENT CORPORATION

33 HILL STREET

LONDON W1

Our Rec George

1627/002

8th January 1962

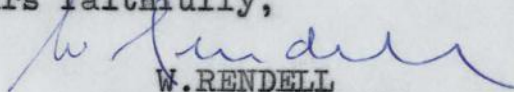
The Secretary,
Federal Power Board,
PO Box 630,
SALISBURY,
S. Rhodesia

Dear Sir,

KARIBA HYDRO-ELECTRIC PROJECT
INSTALLATION OF THIRD TRANSFORMER AT KITWE

Thank you for your letters 71/2 (79) of 27th December 1961 and 71/2 (82) of 28th December 1961. I have to convey the formal approval of Colonial Development Corporation to the proposal of Federal Power Board to install a third transformer and ancillary equipment at Kitwe provided that the International Bank for Reconstruction and Development, Washington and Commonwealth Development Finance Company Ltd, London also give their approval.

Yours faithfully,



W. RENDELL
General Manager

cc IBRD ✓
CDFC
RC(CA)

COLONIAL DEVELOPMENT CORPORATION

33 HILL STREET
LONDON W1

See the Manager

1627/002

8th January 1962

RECEIVED
BANK MAIL ROOM

1962 JAN 11 AM 9: 28

The Secretary,
Federal Power Board,
PO Box 630,
SALISBURY,
S. Rhodesia

Dear Sir,

KARIBA HYDRO-ELECTRIC PROJECT
INSTALLATION OF THIRD TRANSFORMER AT KITWE

Thank you for your letters 7/2 (79) of 27th December 1961 and 7/2 (82) of 28th December 1961. I have to convey the formal approval of Colonial Development Corporation to the proposal of Federal Power Board to install a third transformer and ancillary equipment at Kitwe provided that the International Bank for Reconstruction and Development, Washington and Commonwealth Development Finance Company Ltd, London also give their approval.

Yours faithfully,

W. Rendell
W. RENDELL
General Manager

cc IARD ✓
GDFC
RC(CA)

OFFICE MEMORANDUM

TO: Mr. Michael L. Lejeune *m*

DATE: January 8, 1962

FROM: C. H. Thompson

SUBJECT: Kariba Dam

Whilst in Rhodesia I accepted an invitation from Ward, the Chairman of the Federal Power Board, to fly with him to Kariba on 19th December. The following were the principal points which interested me during the visit:

i) Progress with the electrical installation

Four of the 100 MW sets were operating and the first set was being examined. I was told that hydrogen sulphide, due to the condition of the water in the early days of operation, had caused some damage to the turbines of the first set but that it was only of a very minor nature. The sixth set was being installed.

ii) Weed

I had been told outside Rhodesia that the weeding up of the lake was causing very serious problems. We flew over a good part of the southern end of the lake and at first sight there was no sign of weed but very small patches of dying weed were pointed out to me. I was told that there had been a storm on the lake in November and that it had destroyed much of the weed. It was hoped that as the lake rose the larger mass of water impounded would be subject to greater movement, thus destroying the weed. The tests were, however, still being made with chemicals and it has been found that sodium arsenite would kill the weed without damaging the fish, but its application will be expensive. Given average seasons, the lake is not expected to be full until the middle of next year.

iii) The buttress

Work was proceeding. The engineers were insistent that I should climb down the shaft to see the underground work. Much of the concreting has already been completed on the surface and underground, but progress is slightly behind schedule. It was hoped that the work would be completed by May but a lag of about two months was expected. The opportunity is being taken to extend the concreting in the light of the physical conditions experienced underground and in consequence actual cost may work out in the end slightly above the estimated figure given to the Bank.

cc: Mr. McIvor



INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

ROUTING SLIP

Date

NAME

ROOM NO.

~~Mr M C Walker~~ 809

~~Mr Batesen~~ 10A2

~~Mr Pivaglio~~ 300

~~Mr Barattard~~ 809

~~Fuller~~ 8A8

To Handle

Note and File

Appropriate Disposition

Note and Return

Approval

Prepare Reply

Comment

Per Our Conversation

Full Report

Recommendation

Information

Signature

Initial

Send On

REMARKS

You have probably been
waiting for this

From

[Handwritten Signature]

COMMONWEALTH DEVELOPMENT FINANCE
COMPANY LIMITED

*With the Compliments of
Mr. A. S. G. Hoar*

TELEPHONE: AVENUE 9571

CABLES: CODEFICO LONDON

1 UNION COURT
OLD BROAD STREET
LONDON E.C.2

3rd January 1962

The Secretary,
Federal Power Board,
P.O. Box 630,
Salisbury,
Southern Rhodesia.

Dear Sir,

Kariba Hydro-Electric Project
Installation of Third Transformer at Kitwe

With reference to your letter 71/2(80) of 27th December 1962, I write to convey to you the formal approval of the Commonwealth Development Finance Company Limited to the proposal of the Federal Power Board to install a third transformer and ancilliary equipment at Kitwe.

Yours faithfully,

A.S.G. Hoar
Managing Director

Copy to IBRD
CDC

ASGH/RF

1962 JAN - 8 AM 11:23
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BANK MAIL ROOM

1962 JAN -8 AM 9:43

WASH DC

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JAN 8 1962

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FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

Mr. Factuosh
Mr. Ballillard

P.O. Box 630

25958
TELEPHONES: 20556
29231/2/3

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

RELIANCE HOUSE,
MOFFAT STREET.

SALISBURY,
S. RHODESIA.

ES

71/2 (81)

28th December, 1961

International Bank for Reconstruction
and Development,
Department of Operations
Europe, Africa and Australasia,
1818, H Street, N.W.,
WASHINGTON, 25, D.C.

Dear Sirs,

LOAN AGREEMENT, NO. 145 RN.
KARIBA HYDRO-ELECTRIC PROJECT:
INSTALLATION OF THIRD TRANSFORMER AT KITWE.

✓
With reference to my letter, No. 71/2(78) of
27th December, 1961, I think I should mention that
letters in similar terms have been sent to Colonial
Development Corporation and Commonwealth Development
Finance Company, Ltd., London.

Yours faithfully,

[Signature]
SECRETARY

RJH/ZS

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BANK MAN ROOM
1962 JAN -2 AM 9:16

1962 JAN -2 AM 9:16
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BANK MAN ROOM

RECEIVED
BANK MAN ROOM

1962 JAN -2 AM 9:16

RECEIVED
BANK MAN ROOM

1962 JAN -2 AM 9:16

RECEIVED

FEDERAL BOMBS BOYD

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. Box 630
25958
TELEPHONES: 20556
29231/2/3
TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

71/2 (78)

27th December, 1961

International Bank for Reconstruction and Development,
Department of Operations,
Europe, Africa and Australasia,
1818, H Street, N.W.,
WASHINGTON, 25, D.C.

Dear Sirs,

LOAN AGREEMENT, NO. 145 RN.
KARIBA HYDRO-ELECTRIC PROJECT:
INSTALLATION OF THIRD TRANSFORMER AT KITWE.

In terms of the loan agreement with the Bank, I have to inform you that the Board intends to install a third transformer and ancillary equipment at Kitwe.

The Board has installed two 120MVA transformers and ancillary equipment at its Kitwe substation in order to supply power from Kariba to the Rhodesia Congo Border Power Corporation.

To date, the maximum load supplied is about 160MVA and, on present forecasts, the maximum will rise to 220MVA in the next two years. This will greatly exceed the capacity of one transformer, with a consequent serious inadequacy of security. Should there be a failure of one of the existing transformers, repairs might take many months, due to lack of local repair facilities, and, during this time, there would be a reduction of power supply to Rhodesia Congo Border Power Corporation and a serious loss of revenue to the Board.

The Rhodesia Congo Border Power Corporation has asked the Board to install a third transformer at Kitwe to cover the outage of one transformer and thus improve security of supply. The Board has agreed to do so, on condition that R.C.B.P.C. undertakes to increase its purchases from the Board by not less than an additional 70 million kWh per annum by reducing supplies planned to be taken from other sources for a minimum period of three years, commencing not later than 1st October, 1963. I attach a copy of the proposed Heads of Agreement.

...

/ The price

ack Jan. 19/62

International Bank for
Reconstruction and Development,
WASHINGTON, D.C.

27th December, 1961

The price to be paid by R.C.B.P.C. for the additional energy is 0.375 pence per unit, which will produce a minimum additional gross annual revenue to the Board of £109,375, or £328,125 over the three-year period. The only additional costs which will be incurred by the Board are those associated with the additional transformer to be provided. Present load estimates indicate that there will be ample surplus generating capacity at Kariba and transmission capacity from Kariba to Kitwe throughout the three-year period concerned.

The estimated cost to the Board of the installation of a third transformer and associated equipment, including provision of 20 per cent for engineering and contingencies, is £280,000. The cost could, therefore, be paid for out of the extra revenue received during the minimum period of three years.

The third transformer would, in any case, have to be provided as part of Kariba Stage 2, but it is considered that, as its earlier installation would result in increased revenue from Stage 1, the capital expenditure should be provided out of Stage 1 funds.

The Federal Government has agreed that the sum of £280,000 will be made available from Federal Loan Votes as a short-term loan, upon the following terms and conditions :-

(a) Interest Rate:

6 $\frac{1}{4}$ % per annum.

(b) Redemption Payments:

The loan to be repaid to the Federal Treasury in the following amounts :-

<u>Financial Year</u>		<u>Amount</u>
1963/1964	..	£ 80,000. 0. 0
1964/1965	..	£100,000. 0. 0
1965/1966	..	£100,000. 0. 0.

/ I should be

International Bank for
Reconstruction and Development,
WASHINGTON, D.C.

27th December, 1961

I should be grateful to have formal approval of the International Bank for Reconstruction and Development to the proposal at the earliest possible opportunity, since it is important that the additional plant be installed as soon as possible both in the interests of increasing security of supply and in obtaining additional revenue.

Yours faithfully,


SECRETARY

ADDENDUM TO HEADS OF AGREEMENT FOR SUPPLY
OF POWER FROM THE FEDERAL POWER BOARD TO
THE RHODESIA CONGO BORDER POWER CORPORATION.

1. The following agreement is supplementary to the Heads of Agreement signed on 30th October, 1959.

2. The Board intends, subject to the undertaking given by the Rhodesia Congo Border Power Corporation in Clause 3 below, to install a third 120 MVA 330/220 kV transformer and booster transformer at Kitwe together with the necessary ancillary equipment to enable this to be used on the Kariba-Kitwe line.

3. The Rhodesia Congo Border Power Corporation in a letter dated 7th July, 1961, estimated that their annual purchases from UMHK would be at the rate of 470 million kwh per annum received at Kitwe throughout the period 1961/62 - 1966/67. When the third transformer and booster referred to in Clause 2 above is installed at Kitwe and available for use, the Rhodesia Congo Border Power Corporation undertakes that it will as soon as possible and not later than 1st October, 1963, reduce its annual purchases from UMHK to a maximum rate of 400 million kwhrs per annum, received at Kitwe, and will replace the resulting energy shortfall by additional purchases at the rate of not less than 70 million kwhrs per annum from the Federal Power Board: as from the same date the annual guaranteed purchase (as defined in Clause 2 of the Heads of Agreement dated 30th October, 1959) shall be increased to 1,070 million kwhrs per annum. These altered rates of purchase from UMHK and the Board shall continue for a minimum period of three years thereafter. The price paid by the Rhodesia Congo Border Power Corporation to the Board for the extra 70 million kwh shall be 0.375d/kwh metered at Kitwe.

4. In the event of unforeseen circumstances, including the prolonged failure of one of the Board's main transformers at Kitwe, radically affecting the basis of this supplemental agreement, the supplemental agreement shall be discussed with a view to revision at the request of either party. In the event that no new agreement can be reached between the two parties, the matter to be referred to the Government for decision.

G. R. PETERSON
for Federal Power Board.

F. E. BUCH
for Rhodesia Congo Border
Power Corporation.

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

ROUTING SLIP		Date
NAME		ROOM NO.
<i>B Hathaway</i>		
<i>L Gray Marshall</i>		

To Handle	Note and File
Appropriate Disposition	Note and Return
Approval	Prepare Reply
Comment	Per Our Conversation
Full Report	Recommendation
<input checked="" type="checkbox"/> Information	Signature
Initial	Send On

REMARKS

From

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. Box 630

25958
TELEPHONES: 20856
29231/2/3

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

C2/VAR/7 (46)

RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

22nd December, 1961.

AIRMAIL

International Bank for Recon-
struction and Development,
Technical Operations Department,
1818H Street,
WASHINGTON, 25 D.C.,
U.S.A.

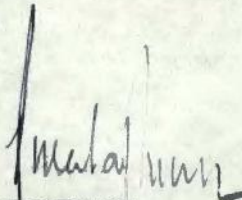
Dear Sirs,

LOAN NO. 1B.145.RN. KARIBA - SOUTH
ABUTMENT - THRUST BLOCK

Further to my letter No. C2/VAR/7(28) of 9th
November, 1961, I now send you a copy of the revised priced
Contract Document.

I am also enclosing a note on the design of the
thrust block prepared by the consulting engineers, attached
to which is a reduced set of drawings.

Yours faithfully,


SECRETARY

*Document & Drawings
being reviewed by
Hathaway.*

GMT/AT

ack. Jan 12. 1962

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~~Mr Aldenwood~~ → RW-4145
~~Mr Hartung~~ East
Op File 8.4.4.

December 21, 1961

George R. Peterson, Esq.
General Manager
Federal Power Board
Reliance House
Moffat Street
Salisbury, S. Rhodesia

Dear George,

Many thanks for your letter of 13 December, with which you were good enough to enclose a note on the progress of work on the new thrust block. I very much appreciate your ready cooperation in making arrangements for a regular monthly report on this work.

With regard to the quarterly reports, we fully understand the work involved in preparing these and we cannot ask for more than your best effort to produce them by the target date.

With warm good wishes to you and Beryl,

Yours sincerely,

P. J. SQUIRE

Philip J. Squire
Assistant Director
Technical Operations Department

cc: Mr. Spottswood

PJS:mec

ROUTING SLIP		Date <i>19 Dec.</i>
NAME <i>Mr. Spair</i>		ROOM NO.
To Handle		Note and File
Appropriate Disposition		Note and Return
Approval		Prepare Reply
Comment		Per Our Conversation
Full Report		Recommendation
Information		Signature
Initial		Send On
REMARKS <i>Noted</i>		
From <i>ASJ</i>		

GENERAL MANAGER'S OFFICE
TELEPHONE 29231

ats
FEDERAL POWER BOARD,
P. O. BOX 630,
SALISBURY,
S. RHODESIA.

C2/VAR/7

13th December, 1961.

Philip J. Squire, Esq.,
International Bank for Reconstruction & Development,
1818 H Street, N.W.,
Washington. 25. D.C.

Dear Philip,

✓
Thank you for your letter of December 8th. As you say, we did receive a letter yesterday from Mr. Spottswood in which he thanked us for the set of working drawings for the work on the south abutment thrust block and confirmed that the Bank accepted our suggestion for reporting on this work in the Board's Quarterly Report.

— The Quarterly Report for the quarter ended 30th September, 1961, has been despatched, but necessarily contains only a relatively brief reference to the south abutment thrust block work and it occurred to me that Mr. Spottswood might like to have a supplementary note on progress rate up to date. I therefore sent him this, and attach a further copy which you may care to have. It is not quite in the form for which you ask in your letter, and I will, of course, be glad to let you have a short monthly report in the form for which you ask, and will try to ensure that it is in your hands by the middle of the month following the month to which it refers. Comparisons of actual progress with programme will be included, and photographs where practicable.

It will not be easy to achieve more rapid completion of the Quarterly Reports, but I will do my best about this. The target date for the production of these reports is six weeks after the end of the quarter to which they refer. During these six weeks the text of the report has to be written, charts, diagrams and photographs have to be prepared, the accounts have to be prepared, the draft material has to be carefully checked and formally approved and, finally, the

/document

Ack'd - 12/21 - PJS

13th December, 1961.

document has to be printed. This latter stage may perhaps take a good deal longer in Salisbury than it does in Washington.

I need hardly add that if there were any serious or dangerous developments affecting the project the Bank would be immediately informed - as they have been in the past - without waiting for the production of any routine reports.

Yours sincerely,



G.R. Peterson.

GRP/PS

NOTE ON PROGRESS OF ADDITIONAL WORK

AT SOUTH FLANK OF MAIN DAM

AT 12TH DECEMBER, 1961

(a) Cut-off Wall and Grout Curtain Upstream of Dam

The cut-off wall has been completed up to level 1595' - the only outstanding work being the details at the top of the wall. The details are not required to be completed for some time.

The grout curtain has been completed.

(b) Main Access Shafts and Interconnecting Adits

The two main access shafts have been completed (to levels 1430 and 1435')

The interconnecting adits have been completed except for the lowest one, which is not required meantime.

(c) Underground Buttresses

The top cells of the buttresses "B" and "C" have been excavated and concreted. Excavation is proceeding for the next cells lower down and for the top cell of buttress "A.1"

The secondary access adits to the buttresses are well developed.

The main downstream access adit to buttress "A.1" has been completed.

(d) External Concrete Thrust Block

Excavation³ for the foundations of the thrust block are approaching completion.

2,350 cubic yards of concrete have been placed in the thrust block out of a total of approximately 30,000 cubic yards.

(e) General

Progress to date is up to schedule according to the overall programme which has just been agreed with the contractor. This programme meets the requirements of construction in regard to the increased lake levels which might be encountered from March 1962 onwards.

A drawing giving a graphical representation of progress is being prepared to accompany future progress reports.

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

ROUTING SLIP

Date

NAME

ROOM NO.

~~A D Spothwood~~
~~P. Squire (Squire has copy)~~
~~Karl A. Hathaway~~ GAH
~~Les Butcher~~
 Files

To Handle

Note and File

Appropriate Disposition

Note and Return

Approval

Prepare Reply

Comment

Per Our Conversation

Full Report

Recommendation

Information

Signature

Initial

Send On

REMARKS

Les, please record
 It is being acknowledged
 (by Mr. Squire)
 genuine
 Please make
 on index NB.

From LJM

GENERAL MANAGER'S OFFICE
TELEPHONE 29231

15N-7m145
FEDERAL POWER BOARD,
P. O. BOX 630,
SALISBURY,
S. RHODESIA.

No.:C2/VAR/7

12th December, 1961.

A.D.Spottswood, Esq.,
Chief, Public Utilities Division,
Department of Technical Operations,
International Bank for Reconstruction & Development,
1818 H Street, N.W.,
Washington 25. D.C.

Dear Mr. Spottswood,

Thank you for your letter of December 4th. ✓

The Progress Report for the third quarter of 1961 should be in your hands very shortly. However, as this necessarily contains only a relatively brief reference to the south abutment thrust block work, I think that you may care to have the attached Supplementary Report.

Yours sincerely,

G.R. Peterson
G.R. Peterson.

*Carded
JR. 12/28/61*

GRP/PS

RECEIVED
BANK MAIL ROOM
1961 DEC 20 AM 8:39

[Faint, illegible text, possibly bleed-through from the reverse side of the page]

NOTE ON PROGRESS OF ADDITIONAL WORK
AT SOUTH FLANK OF MAIN DAM
AT 12TH DECEMBER, 1961

(a) Cut-off Wall and Grout Curtain Upstream of Dam

The cut-off wall has been completed up to level 1595' - the only outstanding work being the details at the top of the wall. The details are not required to be completed for some time.

The grout curtain has been completed.

(b) Main Access Shafts and Interconnecting Adits

The two main access shafts have been completed (to levels 1430 and 1435')

The interconnecting adits have been completed except for the lowest one, which is not required meantime.

(c) Underground Buttresses

The top cells of the buttresses "B" and "C" have been excavated and concreted. Excavation is proceeding for the next cells lower down and for the top cell of buttress "A.1"

The secondary access adits to the buttresses are well developed.

The main downstream access adit to buttress "A.1" has been completed.

(d) External Concrete Thrust Block

Excavation for the foundations of the thrust block are approaching completion.

2,350 cubic yards of concrete have been placed in the thrust block out of a total of approximately 30,000 cubic yards.

(e) General

Progress to date is up to schedule according to the overall programme which has just been agreed with the contractor. This programme meets the requirements of construction in regard to the increased lake levels which might be encountered from March 1962 onwards.

A drawing giving a graphical representation of progress is being prepared to accompany future progress reports.

December 8, 1961

George R. Peterson, Esq.
General Manager
Federal Power Board
Reliance House
Moffat Street
Salisbury, S. Rhodesia

Dear George:

← Nov-9/61

In November we received a letter from the Board's Secretary suggesting that the progress reports on the work being carried out on the new thrust block should be included in the Board's quarterly report to the Bank and we wrote agreeing to this. In view of the importance of this work and the necessity to complete it before the next flood season, however, quarterly reporting would not enable us to follow progress, and I am therefore writing to ask if we could have a special monthly report (apart from the quarterly report) which should include comparisons of actual progress with the original schedule and photographs (where practicable). To be useful, the report should be in our hands by the middle of the month following the month covered by the report and I should be grateful if you would make arrangements accordingly.

I note that we have not yet received your progress report for the quarter ended 30 September 1961. Past reports have been good in substance but delay robbed them of much of their value. Perhaps you would also see what can be done to expedite these quarterly reports.

Yours sincerely,

Philip J. Squire
Assistant Director
Technical Operations Department

PJSquire:anf

INTFRAD 2440098*

RN-2145

INTFRAD 2440098

GIBBOSORUM LDN

6TH DEC 1961

16

ATTENTION DELANY TOD LDN 2 WAEER TOUR WASH58 COPY SENT TO PATON
SALISBURY

FROM GIBBOSORUM

END OF FIRST MESSAGE

December 4, 1961

Federal Power Board
Reliance House
Moffat Street
Salisbury, S. Rhodesia

Re: Loan 145 RN

Gentlemen:

This is to acknowledge receipt of your letter of November 9, C2/VAR/7(28), enclosing a set of working drawings for the work on the south abutment thrust block of the Kariba dam.

We accept your suggestion for reporting on this work in the Board's Quarterly Report.

We appreciate your sending the drawings and we will look forward to the revised priced contract documents.

Sincerely yours,

A. D. Spottswood
Chief, Public Utilities Division
Department of Technical Operations

cc: Mr. Hathaway - *with drawings & incoming letter*
Mr. Verheyen
Mr. Bataillard
Division File

LGM:ls

LSM

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

ROUTING SLIP

Date

Dec. 4. 1961

NAME

ROOM NO.

~~*Mr. Hathaway*~~

~~*3A2*~~

Open files

8A4

To Handle

Note and File

Appropriate Disposition

Note and Return

Approval

Prepare Reply

Comment

Per Our Conversation

Full Report

Recommendation

Information

Signature

Initial

Send On

REMARKS

From *A. D. SPOTTSWOOD*

FEDERAL POWER BOARD

Hathaway SAH
Marshall
(Do not reply)
188

P.O. Box 630
TELEPHONES: 20556
25958
TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

C2/VAR/7(28)

9th November, 1961.

A I R M A I L

International Bank for Reconstruction
and Development,
Technical Operations Department,
1818 H Street,
WASHINGTON, 25 D.C.,
United States of America.

Dear Sirs,

LOAN NO. 1B.145.RN.
KARIBA - SOUTH ABUTMENT -
THRUST BLOCK

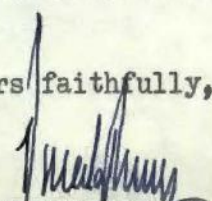
Mr. Paton of the joint consulting engineers, Gibb, Coyne, and Sogei, has mentioned that the Bank would like to have Progress Reports on the new work being carried out on the South Flank of the dam. I would suggest that the most convenient way of doing this would be to include it under a separate heading in the Board's Quarterly Report, together with a Progress Drawing.

The financial position would be mentioned separately in the Report under the heading "State of the Civil Engineering Contracts". I hope this will prove to be satisfactory.

I enclose for the Bank's information a set of the working drawings which have just been received from the Consulting Engineers. They may, however, be subject to further minor modifications. The underground buttresses have been splayed slightly in plan to distribute the thrust more evenly, and this is likely to result in an increase in cost of approximately £100,000 over the existing Contract price of £1.697 million.

Revised Priced Contract Documents are not yet available but I shall send you a copy as soon as it has been received.

Yours faithfully,


SECRETARY.

Kariba
document #101

ack. Dec 4. 1961

RJH/MMC.

RECEIVED
BANK MAIL ROOM
1961 NOV 13 AM 10:09

TO: [Illegible]

FROM: [Illegible]

RE: [Illegible]

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FEDERAL BUREAU OF INVESTIGATION

GENERAL MANAGER'S OFFICE
TELEPHONE 29231

Central File
FEDERAL POWER BOARD,
P. O. BOX 630,
SALISBURY,
S. RHODESIA.

2nd November, 1961.

Michael L. Lejeune, Esq.,
Assistant Director of Operations Europe,
Africa and Australasia,
International Bank for Reconstruction and Development,
1818 H Street, N.W.,
Washington. 25. D.C.

Dear Lejeune,

PROPOSED THIRD TRANSFORMER AT KITWE

In Mr. Ward's absence on leave I am writing in reply to your letter of October 17th, 1961, and to keep you informed of how the above matter is going. I have now reached agreement with the Rhodesia Congo Border Power Corporation on the terms on which the third transformer at Kitwe might be provided by the Board.

The position is quite simple. At present supply to the RCBPC for the Copperbelt is provided by the Board over the single-circuit Kariba-Kitwe line which is equipped with two 120 MVA transformers at Kitwe. The existing agreement covering this supply - of which I attach a copy (marked "A") for ease of reference - provides that the RCBPC are entitled to a supply equal to the full capacity of this line as constructed, less the supply required for the Lusaka Electricity Supply Corporation (now called the Central Electricity Supply Corporation); the Lusaka connection being a tapping from the Kariba-Kitwe line.

To date the maximum load supplied to the RCBPC at Kitwe is about 160 MVA and on present forecasts this will rise to 220 MVA in the next two years. This will greatly exceed the capacity of one transformer (120 MVA), with a consequent serious inadequacy of security. Should there be a failure of one of the existing transformers it would cause a substantial reduction of power supply to the RCBPC and a serious loss of revenue to the Board. We have no similar transformers elsewhere on the system which we could move to replace a damaged transformer and no facilities here for a major repair.

The RCBPC asked the Board to install a third transformer at Kitwe to cover the outage of one transformer and thus improve security of supply. I pointed out that this was not provided for in the existing

/supply

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2nd November, 1961.

supply agreement - which covers only the line as constructed - and that the Board would want a firm promise of additional revenue to justify the additional expenditure. To meet this requirement the RCBPC have undertaken to reduce their previously planned import from the Congo system and consequently to purchase not less than an additional 70 million kwh per annum from the Board for a minimum period of three years, commencing not later than 1st October, 1963, (which is about the date when we could commission a third transformer at Kitwe).

I attach (marked "B") the agreement covering this, if the third transformer is installed, and you will see that the price to be paid by RCBPC for the additional energy is 0.375d/kwh, which will produce a minimum additional annual revenue to the Board of £109,375, or £328,125 over the three-year period. No additional operating expenses will be incurred by the Board as the extra supply can be provided from surplus capacity at Kariba.

The estimated cost to the Board of the installation of a third transformer and associated 330 kV switch and other equipment, including provision of 20 per cent for engineering and contingencies, is £280,000. This estimate has been prepared by the Board's Consulting Electrical and Mechanical Engineers and is closely comparable with the cost of similar equipment in the original contracts. The whole cost would, therefore, be paid for out of the extra revenue received during the minimum period of three years, with a margin of some £50,000.

The third transformer would, in any case, have to be provided as part of Stage II of the Kariba Project, but if installed now should, I think, be considered as constituting part of Stage I, as its earlier installation will provide increased revenue from Stage I.

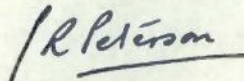
As the additional revenue accrues over a period of three years, whereas the capital expenditure will be largely incurred before revenue is produced, the financing of the capital expenditure will result in a temporary increase in the amount required from Federal Government Loan No. 4 - which has not yet been fully drawn down - but the additional revenue will provide the cash to eliminate the additional borrowing in the course of three years. An alternative would be to finance from bank overdrafts and this possibility is being explored.

/This

2nd November, 1961.

This letter is by way of additional "background" information, and I hope answers the queries in your letter of October 17th. I expect that we shall be in a position to make a formal approach to the Bank in the near future when, of course, full supporting data will be supplied.

Yours sincerely,



G.R. Peterson.



GRP/PSP

A

**HEADS OF AGREEMENT FOR SUPPLY OF POWER
FROM THE FEDERAL POWER BOARD TO THE
RHODESIA CONGO BORDER POWER CORPORATION.**

1. The Board to undertake to make available to the R.C.B.P.C. at the 30th June, 1962, the full capacity of the Kariba/Kitwe line now under construction, less the supply required for the Lusaka Electricity Supply Corporation.

2. The R.C.B.P.C. to guarantee to take 334 million kilowatt hours in the 6 months ending 30.6.1960, 880 million kilowatt hours in the 12 months ending 30.6.1961, 1,042 million kilowatt hours in the 12 months ending 30.6.1962 and at the rate of 1,000 million kilowatt hours in each 12 months thereafter until the termination of this agreement at 31st December, 1966. The price for this guarantee purchase to be 0.72 of a ld. per kilowatt hour delivered and metered at Kitwe. All additional kilowatt hours required up to the capacity of the line, less the requirements of the Lusaka Electricity Supply Corporation to be supplied at 0.375 of a ld. per unit metered at Kitwe.

3. In the event of the Board being unable to supply power during any period of the year, the guaranteed minimum intake obligation of the P.C. to be reduced in the ratio that the period during which the Board is unable to supply bears to the total number of hours in the year.

4. In the event of unforeseen circumstances radically affecting the basis of this agreement, the agreement shall be discussed, with a view to revision, at the request of either party. In the event that no new agreement can be reached between the two parties, the matter to be referred to the Government for decision.

5. The supply to Kitwe from the Board shall not be discontinued for purposes of routine maintenance of plant and equipment except after consultation with the R.C.B.P.C.

6. The R.C.B.P.C. to notify the Board on the 31st July each year of its requirements in megawatts and kilowatt hours for the ensuing two years. The R.C.B.P.C. to undertake to pay at the tariff declared above for not less than $97\frac{1}{2}\%$ of the unit requirements so declared. The Board to undertake to make available up to $102\frac{1}{2}\%$ of the units so declared, subject to this not exceeding the quantity specified in para. 1.

Agreed subject to approval by the Board of the R.C.B.P.C. and the Federal Power Board.

30th October, 1959.

B

ADDENDUM TO HEADS OF AGREEMENT FOR SUPPLY
OF POWER FROM THE FEDERAL POWER BOARD TO
THE RHODESIA CONGO BORDER POWER CORPORATION.

1. The following agreement is supplementary to the Heads of Agreement signed on 30th October, 1959.
2. The Board intends, subject to the undertaking given by the Rhodesia Congo Border Power Corporation in Clause 3 below, to install a third 120 MVA 330/220 kV transformer and booster transformer at Kitwe together with the necessary ancillary equipment to enable this to be used on the Kariba-Kitwe line.
3. The Rhodesia Congo Border Power Corporation in a letter dated 7th July, 1961, estimated that their annual purchases from UMHK would be at the rate of 4.70 million kwh per annum received at Kitwe throughout the period 1961/62 - 1966/67. When the third transformer and booster referred to in Clause 2 above is installed at Kitwe and available for use, the Rhodesia Congo Border Power Corporation undertakes that it will as soon as possible and not later than 1st October, 1963, reduce its annual purchases from UMHK to a maximum rate of 4.00 million kwhrs per annum, received at Kitwe, and will replace the resulting energy shortfall by additional purchases at the rate of not less than 70 million kwhrs per annum from the Federal Power Board: as from the same date the annual guaranteed purchase (as defined in Clause 2 of the Heads of Agreement dated 30th October, 1959) shall be increased to 1,070 million kwhrs per annum. These altered rates of purchase from UMHK and the Board shall continue for a minimum period of three years thereafter. The price paid by the Rhodesia Congo Border Power Corporation to the Board for the extra 70 million kwh shall be 0.375d/kwh metered at Kitwe.
4. In the event of unforeseen circumstances, including the prolonged failure of one of the Board's main transformers at Kitwe, radically affecting the basis of this supplemental agreement, the supplemental agreement shall be discussed with a view to revision at the request of either party. In the event that no new agreement can be reached between the two parties, the matter to be referred to the Government for decision.

G. R. PETERSON
for Federal Power Board.

F. E. BUCH
for Rhodesia Congo Border
Power Corporation.

ROUTING SLIP		Date <i>9 Nov. 61</i>
NAME		ROOM NO.
<i>Mr. Alderfeld</i>		<i>[Handwritten mark]</i>
<i>Mr Spottewood</i>		
<i>Open Files</i>		
REMARKS		
From		

SIR ALEXANDER GIBB & PARTNERS
CONSULTING ENGINEERS

T. A. L. PATON, C.M.G., B.Sc., M.Inst.C.E., F.ASCE., M.I.STRUCT.E.
J. GUTHRIE BROWN, M.Inst.C.E., M.I.STRUCT.E., M.I.E.AUST.
R. L. FITT, B.Sc., M.Inst.C.E., M.I.STRUCT.E.
M. E. GIBB, M.A., M.Inst.C.E., M.ASCE.
L. G. BOOEN, B.Sc., M.Inst.C.E., M.I.STRUCT.E.
J. H. LANDER, O.B.E., M.A., M.Inst.C.E.
A. D. S. MANGNALL.
K. F. SCOTT, M.C., M.Inst.C.E., A.M.N.Z.I.E.
GIBB ASSOCIATES LTD.

QUEEN ANNE'S LODGE,
WESTMINSTER,
LONDON, S. W. I.

CONSULTANTS:
F. W. MATTHEWS, M.Inst.C.E., M.I.STRUCT.E., M.Inst.C.E.I.
J. K. HUNTER, B.Sc., M.Inst.C.E., M.I.MECH.E., M.I.E.E.
H. OLIVIER, C.M.G., M.Sc., Ph.D., M.Inst.C.E., F.ASCE.

ASSOCIATES:
J. L. DERWAS, B.Sc., M.Inst.C.E., M.I.CHEM.E.
H. G. KEEFE, M.Inst.C.E., M.I.STRUCT.E.
R. G. T. LANE, B.Sc., M.Inst.C.E., M.I.E.AUST.
H. L. FORD, F.R.I.B.A., A.M.T.P.I.

2nd November 1961.

Telephones: WHITEHALL 9700
WHITEHALL 0531
Telegrams: GIBBOSORUM LONDON

From T. A. L. PATON.

E/3301/172.

Mr. Gail Hathaway,
Engineering Consultant,
International Bank for Reconstruction and Development,
1818 H Street N.W.,
Washington 25, D.C.
U.S.A.

Dear Mr. Hathaway,

KARIBA

Thank you for your letter of October 30, 1961, about the reports we submitted on the calculations for the thrust on the South, or right, abutment of Kariba Dam with water levels at 1560 and 1606. I note that these documents have been reviewed by the Bank and by Mr. J. J. Hammond, one of your Consultants on arch dams. I am very pleased to note also that Mr. Hammond advises that the results of the analysis as shown on our report of September 1961 are reasonable and correct.

I am sending a copy of your letter to the Federal Power Board and will ask them for permission to send on to you the revised design of the buttresses, the drawings for which we have just submitted to the Board. I am also advising our colleagues in Paris of the result of Mr. Hammond's examination of our reports.

For your/.....

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TO THE DIRECTOR OF THE BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535
FROM THE DIRECTOR OF THE BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

RE: [Illegible text]

MEMO

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LETTER
LONDON 8 M 1
GREEN VINCE LODGE

Mr. Gail Hathaway.
2 November 1961.

-2-

For your information, the latest report from the site is that the progress is satisfactory. Two of our designers are at Kariba at the present time finalising the programme of the works in detail with the Contractors, Impresit, and with our Resident Engineer and his staff.

Yours sincerely,

angus Paton



October 30, 1961

I. C. Evans, Esq.
Federal Treasury
P. O. Box 8137
Causeway, Salisbury
Federation of Rhodesia
and Nyasaland

Dear Mr. Evans:

Thank you for your letter of October 18, 1961, ref. B/187/14,
informing us that the British South Africa Company made a formal
transfer of its rights and liabilities under the agreement with
the Federal Government covering a loan of £4 million to the latter
for the Kariba project, to Indaba Investments (Pvt.) Limited, a
company incorporated in Southern Rhodesia.

Yours sincerely,

Michael L. Lejeune
Assistant Director of Operations
Europe, Africa and Australasia

J.B.

JBataillard:eb
cc: Messrs. Piccagli
Verheyen
Bateson (cleared with)

October 30, 1961

Mr. T.A.L. Paton
Sir Alexander Gibb & Partners
Queen Anne's Lodge
Westminster
London, S.W. 1, England

Dear Mr. Paton:

Re: Kariba

Reference is made to your letters of September 12 and 15, 1961, respectively, transmitting the report on the calculations for the thrust that will apply at the south abutment of Kariba Dam for:

- (a) the dam as at present and water level 1560, and
- (b) for the completed abutment with water level at 1606,

with accompanying drawings showing the values of the thrusts and their lines of action. You also state that the direction of the thrusts as computed from the trial load analysis is inclined a little downstream as compared with the original assumptions and you are, accordingly, modifying the design of the thrust block in order to improve the stability of the block as a whole.

The documents on the thrust analysis pertaining to the right abutment of the Kariba Dam, have been reviewed in the Bank and by Mr. J.J. Hammond, one of the consultants for the Bank on arch dams. Mr. Hammond advises that the results of the analysis as shown by the drawings accompanying your Report on Thrust Analysis, Kariba Dam South Abutment, dated September 1961, are reasonable and correct.

Your letter of September 15, 1961, concerning the modification of the buttresses to suit the direction of the thrust, states that drawings showing the revised design of the buttresses will be forwarded to the Bank when they have been completed. We are looking forward to receiving the modified design of the buttresses.

Sincerely yours,

cc: Messrs. Aldewereld/Squire
Spottswood

Gail A. Hathaway
Engineering Consultant

B/187/14

RHODESIA AND NYASALAND



ICE/ARN

FEDERAL TREASURY,
P. O. Box 8137,
Causeway,
SALISBURY.

18th October, 1961.

The International Bank for Reconstruction and
Development,
1818 H Street, N.W.,
WASHINGTON 25 D.C.

United States of America.

Gentlemen,

KARIBA HYDRO-ELECTRIC PROJECT : LOAN BY THE BRITISH
SOUTH AFRICA COMPANY.

I refer to my letter No. B/187/14 dated 19th September
1960 and have to inform you that the British South Africa Company
made a formal transfer on the 9th October, 1961 of its rights under
the Kariba Hydro-Electric Scheme Loan Agreement to Indaba
Investments (Pvt.) Limited, a company incorporated in Southern
Rhodesia.

The Colonial Development Corporation and the Commonwealth
Development Finance Company have also been informed of the assignment,

Yours faithfully,

I.C. Evans
I.C. EVANS.

for: SECRETARY TO THE FEDERAL TREASURY.

ad- Oct-30/61

October 17, 1961

Mr. J. Ward
Chairman
Federal Power Board
P.O. Box 630
Salisbury, Southern Rhodesia

Dear Jimmy,

Thank you for your letter of September 29. Our people were glad to be of help in the South Bank abutment problem and they are continuing to keep in touch with the work going on there.

Thank you also for giving us advance word of the Board's proposal to begin preparation for installing a third transformer at Kitwe. While my informal reaction to the proposal as outlined in your letter is that we would probably have no objection, I cannot at this point give more than a tentative view. As of course you know, the Bank would wish to have full details before giving a formal opinion. Two questions immediately come to mind: first, whether the loading of the existing transformers is such as to justify installing the third; and secondly, whether the price you mention of £300,000 is not very high compared with the cost of the two existing transformers. We should want to be clear, also, as to your views on the growth in demand. A question here, for example, is whether the additional 10 megawatts you mention in your letter is part of the 50 to 60 megawatts of the Congo supply, or whether some or all of it would be new demand.

I notice that you would treat this step as part of Stage II and the financing of it would thus be governed by the covenant in the Loan Agreement dealing with the financing of Stage II. From what you say, and without digging into the question more deeply, it is not clear to me that it is necessarily part of Stage II, but on the question of financing half the cost of the new transformer from your own reserve

Mr. J. Ward

- 2 -

October 17, 1961

and borrowing the other half, when the time comes for you to put this to us formally, I should expect that the Bank would not object to your financing it in this way.

I hope that these remarks will be of some help to you, tentative though they must be. In the meantime we await official advice of the Board's proposals.

With kind regards,

Yours sincerely,

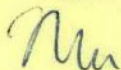


Michael L. Lejeune
Assistant Director of Operations
Europe, Africa and Australasia

Cleared with and copies to:

Mr. Piccagli
Mr. Bateson
Mr. Verheyen

SNMcIvor:MLLejeune:ang



GENERAL MANAGER'S OFFICE
TELEPHONE 29231

Mr. Alderson
Mr. Spence
Mr. Hathaway

FEDERAL POWER BOARD,
P. O. BOX 630,
SALISBURY,
S. RHODESIA.

16th October, 1961.

P. J. Squire
P. J. Squire, Esq.,
International Bank for Reconstruction and Development,
1818 H Street,
Washington. 25. D.C.

Dear Philip, .

Thank you for your letter of October 11th, 1961,
from which I am glad to hear that Mr. Hammond has no adverse
comment on the results of the trial load analyses. ✓

The design of the thrust block is now being
finalised and as soon as this has been done I will be able to
have a look at our existing tariffs and see whether revisions
are necessary. I will, of course, keep the Bank informed
about all this.

Yours sincerely,

Peter

G. R. Peterson.

GRP/PS

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49A LYTTON GROVE,

PUTNEY,

LONDON, S.W.15.

PUTNEY 6018

9.11.61

Dear Mr Hathaway

This is the article referred to
in discussion in London on 6 November

J. D. Gwynn

[J. D. GWYNN].

life work of reconciliation and co-operation in Western Europe. This, apart from his personal character, must have been Erhard's constant preoccupation when the picture of Strauss and Mende dominating a non-Adenauer coalition rose in his mind. The recent efforts to get negotiations moving fast between the Six and Great Britain reflects this feeling; Adenauer and Erhard want to get the harvest home in Western Europe before the real war of succession breaks out.

The Social Democrats have behaved with dignity and responsibility. They want a broad coalition and have said and done nothing that could either put that out of court or could make themselves look over-eager. Their own policies would have to be met in social and internal questions, but they would never endanger Western unity or risk the fragile safety of Berlin with wild words. Easing the burden of taxation on small incomes could be achieved without upsetting the enlightened self-interest of the wealth-producers on which Erhard's neo-liberalism is based. The distribution of ownership in industry could be increased along the lines of the policy already begun of 'people's shares,' which show a real alternative to nationalisation. And the welfare services offer a large field for reform of the outdated and ludicrously overstuffed administration. There are serious drawbacks to such a coalition—not least the danger of every public appointment becoming the subject of political wangling which has such a stifling effect on life in Austria. But the greatest danger of the Social Democrats in government would be avoided—that is, the refusal of short-sighted bankers and industrialists to work with the hated Socialists.

In the meantime, though, the Christian Democrats offered a temporary chancellorship of Adenauer's, to be reconsidered later (though this promise obviously could not be legally enforced), to the Free Democrats; having given them a good fright, and shown once more his superiority at manœuvring, Adenauer can now graciously let Mende into the government, no longer as a key figure, but as a new boy with much to learn. Mende may still prefer the wilderness and the advantage of saying 'I told you so' over Berlin. Brandt and Wehner, the Socialists, have said many times that they are willing to bear their share of the responsibility for the difficult days that are coming. It is not only Socialists who are beginning to find their attitude the more dignified of the two.

The Kariba Dam

By GRACE SCOTT

A JOKE went into circulation in Northern Rhodesia shortly after Federation became a *fait accompli* which is still going the rounds: about Northern Rhodesia no longer being the 'Black North' (as it has been known by those in the South for so many years), because it has been bled white by Southern Rhodesia. It may not be very funny, but it somehow expresses the wide and indisputable disparity between the two territories.

For two adjoining pieces of Africa sharing a common name, Northern and Southern Rhodesia are remarkably incompatible. They have different forms of governments, different economies, different outlooks, different problems—and, before Federation, a very different bank balance. Northern Rhodesia before 1953 had an annual surplus in the region of £15,000,000; Southern Rhodesia had almost forgotten what 'surplus' meant. But soon after Federation Northern Rhodesia's surplus dropped to a mere £2,000,000, with little to show for it except—or so it seemed to Northern Rhodesians—down south. Salisbury, for instance, appeared to be burgeoning with new roads, new hospitals, new post offices and other signs of prosperity; it soon became known as 'Bamba Zonke' (rhymes with donkey), which is Kitchen Kaffir for 'Take the Lot.' The appellation lost the residents of Salisbury no sleep—if they were kept awake at nights, it was by the feverish banging and hammering of workmen as one skyscraper after another rose to the heavens. Bamba Zonke was becoming a boom town.

But by far the biggest bone of contention between the two Rhodesias was Kariba.

Before Kariba was mooted, Northern Rhodesia had begun work on an excellent hydroelectric scheme of its own on the Kafue river. At the point where the river flows through a narrow gap, experts maintained, a dam could be built at relatively low cost which would have produced all the power necessary for the copper mines, and more, by 1959. By the time of Federation Northern Rhodesia had already spent a million pounds on this scheme, and had been given an undertaking by Sir Godfrey Huggins that it would be proceeded with under the Federal regime. Then, Sir Godfrey pulled Kariba out of the bag; much more grandiose, much more expensive—but much nearer Salisbury.

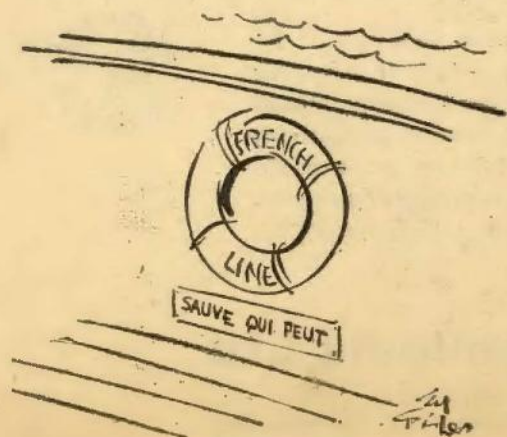
Northern Rhodesians—who were already beginning to suspect that Federation was a sort of Southern Rhodesia Benefit—read into this proposal to scrap the Kafue scheme, and harness the Zambesi instead, a determination by Southern Rhodesian big business to ensure that everything came Southern Rhodesia's way. Bamba Zonke, they told each other, was at it again. Protest meetings were held in the big towns; indignant letters went out to the editors of local papers; MPs were lobbied; and sun-downer conversation consisted of little else for months.

But for all their indignation, when the matter was debated in the Federal Assembly, it was left to four opposition members, two

Europeans and two Africans, to oppose it. Northern Rhodesian members of the Federal Party (the party in power), although vociferous enough at first, by the time the House sat had been won over to the Kariba side. The opponents of the Kariba project could point out that not only was Kafue a cheaper scheme (it could have produced as much power as Kariba for a much lower cost at a much earlier date, and could have been paid for out of Northern Rhodesia's surplus without the Government having to resort to loans), but it was far and away the *safer* scheme. The site, too, was a 'natural' for a dam construction—the sides were of granite; and nothing like the same amount of land clearing and moving of indigenous peoples would have been involved. But reasonable though these arguments were (and prophetic, too, in the light of recent disclosures), they were dismissed by the Southern Rhodesian Federals, enjoying a large majority in the House, who had made up their minds to have Kariba. There was nothing anybody in the North could do. It is not difficult, in retrospect, to read into their change of plans a reluctance on the part of Sir Godfrey and his supporters to commit themselves to a project in a territory that might conceivably one day be run by a black government. If this was indeed the reason for the quashing of Kafue, then the possibility of the Federation's breaking up was, ironically, being considered by its architects almost before it had been created.

Northern Rhodesian pride had more blows to suffer. The Kariba township, consisting of employes' houses, hospitals, shops, offices, churches and a modern luxury hotel, was built on the Southern Rhodesian side of the river; and, to add insult to injury, Northern Rhodesians could not get across the temporary bridge to the hotel to assuage their thirst without a special permit from the Federal Power Board. However, this is water over the dam. As soon as the gigantic wall was complete, with room for four lines of traffic to pass over its top, even Northern Rhodesians had to admit it was a wonderful piece of engineering, and to begin to take pride in it.

The adventures and vicissitudes connected with the construction of Kariba are well known: the moving of the Tonga people who lived in the area to be flooded, and the rescue of game from the rapidly disappearing islands, which captured the imagination of TV viewers everywhere. Even the encroaching *Salvinia Auriculata*, the pretty green 'Kariba weed,' has figured in the world press. Kariba helped to put the Central African Federation on the map: tourists see it even before they go to see the Victoria Falls, 250 miles upstream. Tongans fish happily and profitably from primitive dugouts in the vast, well-stocked lake. Water-loving Europeans of both territories, who had hitherto not known what to do with their long weekends, find they have a brand-new inland sea. Sailing, water ski-ing, speed-boating, fishing or just messing about in boats have become a



“...where does it all go?”



“ Lots of places—people we work with in Britain and Europe mainly. Every country will want petroleum chemicals eventually.

I didn't mean geographically—I meant, what's the use of all the chemicals you make at Grangemouth.

We turned out over 200,000 tons of chemicals last year, it'll be a quarter of a million this year—when you produce on that scale, it isn't just *one* use you talk of—it's hundreds. Other chemical manufacturers take most of them—ethylene, ethanol, butadiene and basic products of

that sort. Our polyethylene Rigidex gets right into your home. So do polystyrene, detergents, paints, cosmetics, synthetic rubber, pharmaceuticals and all the other things our customers and customers' customers make.

Sort of chain reaction, in fact?

Yes, that's why we keep on expanding—a possible new use seems to crop up about once a week. Industry keeps coming back for more, and this year's quarter of a million tons won't be enough for next year.

Rigidex is a registered B.H.C. Trade Mark



British Hydrocarbon Chemicals Ltd

WORKS: Grangemouth, Stirlingshire & Baglan Bay, Glamorgan (under construction)

HEAD OFFICE: DEVONSHIRE PLACE • MAYFAIR PLACE • LONDON W1 • TEL: MAYFAIR 8867

Rhodesian pastime. There is something fascinating about tying one's boat to the topmost branches of a baobab tree, exploring islands which were up to a few months ago uninhabited mountain-tops and entangling one's fishing tackle in submerged bushes and brambles that once gave shelter to wild animals.

But the business record of Kariba is less sporting. In one of the windows of Rhodesia House in the Strand, the 'blurb' on Kariba, under the theme of 'POWER FOR PARTNERSHIP,' reads:

Power for the factories; Power for the homes; Power behind the fastest growing economy in Africa; Power to bring 8 million Africans into the Federation's rapidly expanding economy. To give them the jobs and the prosperity which Partnership is creating. This is the true meaning of Kariba.

Apart from the shock it gives the visitor from Rhodesia to realise that the word 'Partnership' (now seldom mentioned in the Federation) is still being used as a gimmick in Britain, this poetic puff must make Rhodesians feel somewhat wistful. Hydro-electric dams naturally represent a great attraction to new industry wherever they are erected; but (through no fault of its own) not Kariba. Even the Federal Minister of Finance had to admit, when he was presenting the budget last June, that outside investment was not coming into the Federation as quickly as he and his fellow Rhodesians had hoped. He blamed this on to events in the Congo and other parts of Africa, but it is unlikely he fooled many of his listeners. If outside investment is fighting shy of the Federation, it is because of the political uncertainty in the Federation itself—not in any other part of Africa. And if its politics were not enough to deter foreign capital, then the Government's drastic exchange control measures earlier this year to stop money going out of the country have done nothing to encourage money to come in.

Now, the announcement that an abutment has to be built to strengthen the dam, at a cost of £8 million, owing to a fault in the rock on the south bank, has added to the list of drawbacks. But the news has far more serious implications than that it will push up the cost of power. The Kariba dam was designed by the same man and on the same principle as was the ill-fated Fréjus dam in France. A feature of this type of dam is that the main strain is transmitted from the wall to the banks; and it was a faulty bank at Fréjus that was responsible for the catastrophe. The huge patch, therefore, of poor-quality rock on the south side of Kariba could not be lightly shrugged off.

But the shrug followed. The Minister for Power assured the Federal assembly that there is nothing unusual about a thrust block being added to a dam—lots of dams have them. The fault, he said, had been known from the beginning, but it had been thought that jetting and grouting (scraping out the soft micaceous rock and replacing it with concrete) would have been sufficient to ensure the safety of the dam wall. Unfortunately, the contractors jetted and grouted to the tune of a million pounds before it became clear that some further reinforcement would be necessary.

The opposition, unconvinced, called for the appointment of a select committee of inquiry

into the whole matter. Some of them had been making some investigations of their own, and had unearthed some disquieting facts. From their findings it appeared that insufficient geological survey had been made before work on the dam had been commenced; that the Northern Rhodesian Geological Department had, in the beginning, expressed concern about the quality of rock in the south bank, but had been refused funds for further investigation; that the contractors themselves had discovered weaknesses but had been told to carry on, and so on. But the upshot was as expected: the motion was carried and the amendment defeated.

There things might have rested, but for the tenacity of one of the opposition members, Mr. Robert Moffat, brother of Sir John Moffat, leader of Northern Rhodesia's Liberal Party. Mr. Robert Moffat published his misgivings in the September issue of the Federation's liberal monthly, the *Central African Examiner*, showing how the geological survey had been seriously neglected in order that the Kariba scheme might be pushed through to enable cheap electric power to be transmitted to the Copperbelt by 1960. 'The meeting of this deadline,' he wrote, 'had, of course, important implications in the party political sphere.' He also claimed that some experts have privately expressed their deep concern about recent developments at Kariba, where

they believe the mica seam in the south bank to be much more extensive than the Government has disclosed.

If these allegations are true, and there is no reason to suppose that Mr. Moffat, who is sincere, rather shy and certainly not given to seeking the limelight, has been inventing them, then obviously some action is called for to reassure the public about the safety of Kariba. It is hard to understand why the Federal Government should have refused to consider the appointment of a committee of inquiry—the cost would have been a fleabite compared to the £75 million or so already spent on the scheme, and valuable publicity would follow if Kariba is found to be as safe as the Rock of Gibraltar. As it is, the rumours that are bound to circulate (and indeed have been circulating for the past two years) about the dam not being all it should be will do the Federation a great deal of harm—and frighten away outside investment.

Meanwhile Rhodesians treat the matter as a sick joke. 'We're going to Kariba on Sunday,' they say, '—if it's still there'; and they speculate on how they will retrieve their boats from the hill tops when the water has gone. But few people are really worried. The Kariba is so tremendous that it is as impossible not to believe in its durability as it was not to believe in the unsinkability of the Titanic.

The Churches

Decline and Fall

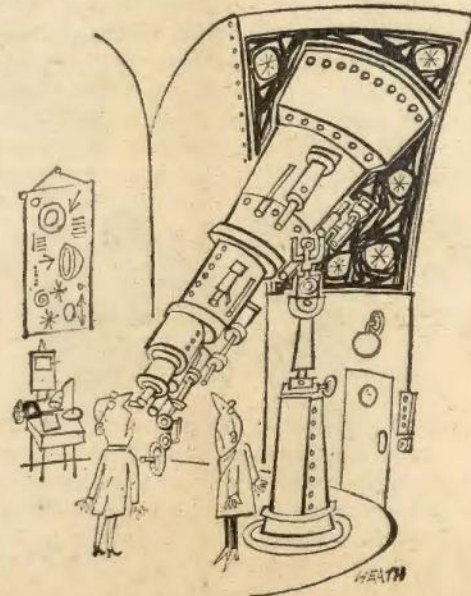
By MONICA FURLONG

YES, but *did* the decline of the Roman Empire begin with sexual depravity; and isn't sexual depravity a symptom of another and more serious malaise; and what, to a Christian at least, was so good about the Roman Empire even in its heyday? There is a horrible irony about Dr. Weatherhead's remark in the *Times*, rather as if a Jew should nostalgically recall the glories of Hitler's Reich. All of which brings me, reluctantly, to discuss Christians and sex; reluctantly, because, as Mr. Roy Brooks recently remarked, we have an unwholesome obsession with the subject, and, as half my friends regularly point out to me, we pontificate far too much anyway.

I am sometimes tempted to defend all the tutting over sexual immorality by saying that after all this does matter much more than lots of other things; that, as they say in the handbooks on marriage, if we get this wrong we shall get nothing else right. A society in which little children get venereal disease, in which every sweet shop carries its shelf of sadistic fantasies, in which love is not regarded as the prerequisite for sexual intercourse, is a sick one in the eyes of many people besides Christians, and the sooner we make an accurate diagnosis the better. But I know at heart, as do the critics of the Church, that these shocked exclamations over adultery and illegitimate babies, over venereal disease and teenage morals, over perversions and pornographic books, achieve nothing at all. It seems worth while to ask why.

Perhaps because there is so little that is Christian about them. Christians who have under-

stood their faith aright are the least shockable of people and it is logical that they should be so. At the root of their faith is the knowledge that sin is the condition of man, a condition from which he is only delivered by entering into relationship with God. Knowing that the flaw is there, that it runs alike through the priest and the teddy-boy, through the bishop and the bigamist, must remove at one go all element of surprise and all impulses of superiority over the failings, sexual

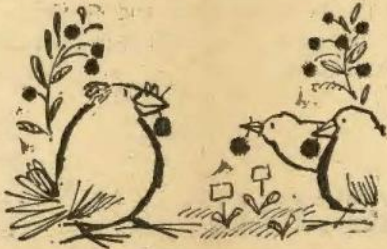


'It is a double-decker bus'

THE GILDED CAGE

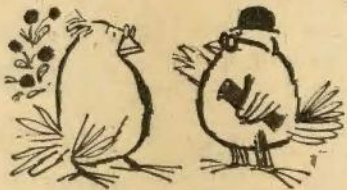
an economic fable

ONCE UPON A TIME there was a wise old bird who laid nest-eggs. People brought him their berries and he took them in his beak and flew off into the forest. There—for he was a wise old bird and knew the forest well—he planted them. And there, in due course, they sent up shoots. The wise old bird tended these shoots carefully. He watched them and watered them. He perched day and night on a neighbouring branch and was never caught napping. So



the berries grew into berry-bushes. Very productive berry-bushes. And when winter arrived the same people came to him—and he gave them back their berries and more besides. And this way there were always berries, winter and summer, for the people who cared to come to the wise old bird. And this was how he laid his nest eggs.

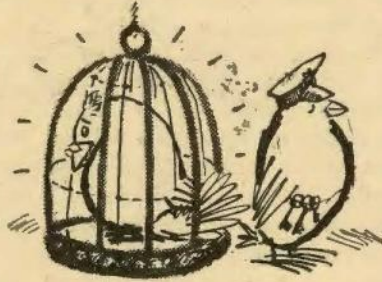
Then the Keeper of the forest came to see the wise old bird. "This can't go on!" he said. "Why not?" said the wise old bird. "I've been doing it for two hundred years and everyone seems quite happy."—"But I'm not happy," said the Keeper. "It's untidy, that's what it is. There you go, planting your berry bushes all over the forest. Never a thought as to where they'll look best."—"I think of where they'll grow best," said the wise old bird. The Keeper wasn't listening. "It's just plain selfish," he



cried indignantly. "You never think of trying to keep the forest with everything in balance—every branch with a creeper, every creeper with a branch."—"I go to a lot of trouble to keep it in the best state for growing berry bushes," said the wise old bird. "And that's good for everyone, not

just the people who save their berries and bring them to me to plant, instead of eating them at once."

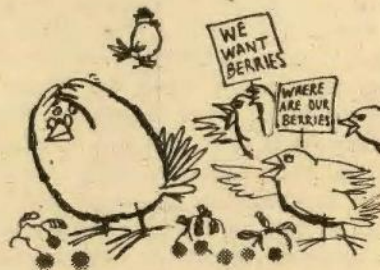
But the Keeper wouldn't listen. He went and got an expensive gilded cage, and put the wise old bird into it. He was still allowed out to plant berry bushes, but only with an Under-Keeper to see that he planted them in officially approved places. The wise



old bird knew that many of these weren't good for growing berry bushes. But there was nothing he could do. And he thought it was unfair to the people who saved their berries and brought them to him that what they saved should now be used simply for keeping the forest tidy, instead of for growing lots of berries for winter time. But there was still nothing he could do.

And winter came, and there weren't enough berries to go round. And the people blamed the wise old bird. "Next time," they said, "we won't bother to bring our berries to him." And they didn't. They ate them instead.

The Keeper didn't like this, but there was nothing he could do about it. He couldn't watch every mouth in the forest to see if it



was munching at the wrong moment or not. And no berry bushes were planted, and the forest suddenly began to look much more untidy than before.

And the winter after that everyone went hungry, including the wise old bird, the Under-Keeper and the Keeper himself.

MORAL :

You can break a lot of nest-eggs and still not make an omelette.

* * * * *

ISSUED BY THE LIFE OFFICES' ASSOCIATION,
LONDON—AND ASSOCIATED
SCOTTISH LIFE OFFICES, EDINBURGH.

or otherwise, of other people. Since, to the Christian, all sin is perversion, there is little point in picking out certain kinds of behaviour for moral censure and ignoring other, equally loveless, kinds. Suppressing dirty books, censoring bawdy and realistic plays and films, hiding prostitutes away where they do not offend the public eye—these achieve, on a straightforward reading of the Christian faith, nothing at all. It is treating the patient for acne when he is dying of cancer. 'Man,' says the Christian with the depressing honesty which maddens the humanist, 'is so sick that nothing will do any good but a major operation. And the operation involves not giving up fornication or adultery or lewd books, but giving up himself.'

It remains to ask how so many otherwise dedicated Christians can continually speak as if they themselves were outside the struggling mêlée of temptation and sin, instead of painfully engaged; and to wonder at the emotion which seems to lurk for them in what needs to be an objective survey of the situation. Since the target for moral brickbats is nearly always youth and since the speakers are very often middle-aged or elderly men, it is time perhaps to take note of another kind of temptation; the envy which youth, with its beauty and virility, may inspire in the old. Not to acknowledge this is to allow a recurring error to muddle our social calculation.

One of the signs of the times, along with mothers writing to the papers that they have two children and don't want them bombed, is injured letters to editors complaining in aggrieved tones that the Church is giving the writers no directive in the present situation. This intrigues me. If Dr. Ramsey were to write to such earnest inquirers telling them to go at once to confession, and to spend the next week in fasting and prayer for world peace, would they do it? 'If Jesus Christ had been alive today, I don't know which side he would have been on, but he would have been on *someone's*,' said a recent letter to the press. But would He? His Jewish contemporaries were one gathers, briskly writing 'Romans, Go Home' on available walls, but He continued to insist that social cure began on a quite different level. The Christian directive remains as humdrum and as rigorous as it has always been; prayer and the sacraments, doing battle with all one's loveless impulses, being faithful to one's family, one's friends, one's fellow-believers, caring for the poor and the sick, accepting the unlovable and the unattractive. It's an oddly indirect programme, one which in the short run takes less courage than sitting down in Trafalgar Square, but in the long run takes rather more. It is a method which, practised by the early Christians, who also believed the end of civilisation to be imminent, had quite as much to do with toppling a bloody and arrogant regime as sexual depravity.

The *Guardian* recently carried a report of the Horsemen's service at Epsom Downs when nearly 1,000 riders, not to mention their horses and ponies, listened to a sermon by the Bishop of Guildford. 'The service was conducted by the Vicar of Burgh Heath, the Rev. A. L. Bird, from an improvised altar on which stood a symbolic bowl of corn. At his feet was a saddle and harness.'

Isn't that Dr. Huxley over there by that loose-box, chuckling to himself and rubbing his hands?

October 11, 1961

Dear George:

I was glad to have your letter of September 28 advising us that you have reached satisfactory agreement with Impresit regarding the rates for the work now being undertaken to safeguard your dam.

We duly received from Gibb the results of the trial load analyses with details of the method of calculation used. We got Mr. Hammond (mentioned in my last letter) to review this and have now heard that he has no adverse comment.

I was interested to read in the September issue of "Water Power" Mr. Ward's statement regarding the additional work required at Kariba and particularly his reference to the likelihood that you will have to revise the planned rate of decrease in the Board's average selling price. When you have had time to work things out perhaps you would let us know what you propose in this connection with the resulting financial forecast.

I very much appreciate your suggesting that Barbara and I should come and see your block and I wish we could. I am sure somebody from the Bank will go over to see it but whether I will be the lucky one is impossible to say.

With kind regards,

Yours sincerely,

F. J. SQUIRE

Philip J. Squire

George R. Peterson, Esq.,
General Manager
Federal Power Board
Reliance House
Moffat Street
Salisbury, S. Rhodesia

October 10, 1961

Mr. John J. Hammond
Consulting Engineer
630 Forest Street
Denver 20, Colorado

Dear Mr. Hammond:

Re: Loan No. 115-RN - Kariba Dam

In Mr. Hathaway's absence I wish to acknowledge receipt of your letter dated October 7, 1961, together with the documents which had been sent to you with the Bank's letter of September 27.

✓ Sincerely yours,

Secretary to Mr. Hathaway

* - To Mr. Spaldwood.

October 10, 1961

Mr. John J. Hammond
Consulting Engineer
630 Forest Street
Denver, Colorado

Dear Mr. Hammond:

Your letter dated October 7, 1961 addressed to Mr. Hathaway has been brought to my attention in Mr. Hathaway's absence.

I am obliged for your written confirmation of the views already given to us verbally. I would agree with you that, as the consultants have undertaken to revise the design of the thrust block to allow for the downstream component of the thrust, it will not be necessary to review their construction drawings.

Sincerely yours,

P. J. SQUIRE

Philip J. Squire
Assistant Director
Department of Technical Operations

MPiccagli:abs
cc: Mr. McIvor
Mr. Hathaway
Div. File

ROUTING SLIP

Date

Oct. 9, 1961

NAME

ROOM NO.

- | | | |
|----|---|----------------|
| 1. | Mr. Spottswood / <i>Squire</i> | 300 |
| 2. | Mr. Hathaway | 3A2 |
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To Handle

appropriate Disposition

approval

Comment

Full Report

Information

Initial

Note and File

Note and Return

Prepare Reply

Per Our Conversation

Recommendation

Signature

Send On

REMARKS

From

3A2

RESIDENCE: 630 FOREST ST.
PHONE EAST 2-4242

JOHN J. HAMMOND
CONSULTING ENGINEER
DENVER, COLORADO

~~XXXXXXXXXXXXXX ST.~~
~~XXXXXXXXXXXXXX ST.~~

October 7, 1961

Mr. Gail A. Hathaway
International Bank for Reconstruction and Development
1818 H Street
Washington 25, D.C.

Rec'd 10-9-61

Dear Mr. Hathaway:

I have reviewed the documents you sent me on the thrust analysis pertaining to the left abutment of Kariba Dam. Document entitled-"Federal Power Board, Hydro-Electric Board, Kariba Dam South Abutment, Report of Thrust Analysis, September 1961". gives the results of the analysis and they are reasonable and correct.

It is noted that the thrust on the blocks of the left abutment as now constructed, with water surface at elevation 1560, has been reduced from their previous estimate of 130,000 tons to 94,000 tons, due to their trial load analysis. The direction of this force both vertical and horizontal, comes well within the blocks of the present dam and are satisfactory. The direction and magnitude are shown on Figures 11 and 12 of the above document.

The direction and magnitude of the thrust to be carried by the new Thrust Block with water surface at elevation 1606, are shown on Figures 13 and 14. The horizontal direction of the thrust comes downstream farther than desirable and will require thickening of the thrust block on the downstream side. This they have indicated they are doing, as noted in the correspondence.

I do not know whether the final design of the thrust should be reviewed. If the thrust block will be revised to take care of the downstream direction of the thrust, I do not believe it will be necessary to review the drawings. This I will leave to your discretion.

I am returning the various documents you sent to me.

Very truly yours,

John J. Hammond
John J. Hammond

*Final received 10-9-61
agk
Rec'd in Op. files
Oct. 11/61*

Oct. 10/61

RECEIVED
BANK MAIL ROOM

1961 OCT -9 AM 11:35

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CONFIDENTIAL BOND

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OFFICE MEMORANDUM

TO: Files

DATE: October 5, 1961

FROM: G. A. Hathaway *GAH*

SUBJECT: 145-RN - Kariba Dam - South Abutment

In a telephone conversation on October 3, 1961, Mr. Hammond, an engineer member of the Bank's Board of Consultants on Thin Arch Dams, advised that after reviewing the report on thrust analysis for the Kariba Dam South Abutment, dated September 1961, prepared by the consulting engineers, Gibb, Coyne, Sogel (Kariba)(Pvt.) Ltd., he was satisfied with results of the study and the data at hand, and concurred in the conclusions of the consultants, namely, that:

- 1) a reservoir level of 1560 is permissible under present conditions, and
- 2) the design assumptions previously made for the abutment block appear adequate.

Mr. Hammond was asked to prepare a written report outlining the results of his review; also, would he please return the copies of the correspondence and the consultants' reports that were furnished to him for review.

Mr. Hammond was also advised that Electroconsult had presented the Bank with a draft copy of a report on the right bank problems at Kurobe Dam. The report concludes that the partially constructed right abutment wing wall should be utilized and either two or three of the gravity blocks that were recommended by the Board in their June 8, 1961 report should be eliminated.

The conclusions of Electroconsult's most recent report on the right bank problems are not in accordance with the latest recommendations of the Board; therefore, Mr. Hammond was queried as to whether he might attend a meeting of the Board in Paris on October 14 or 16. Electroconsult desires to complete a design in accordance with their most recent findings in order that the ISMES Laboratory at Bergamo might begin construction of the new model of the dam by November 1, 1961. Messrs. Hammond and Burwell are both members of the Bureau of Reclamation Board of Consultants on Glen Canyon and Flaming Gorge Dams which have scheduled meetings for the period October 8 - 17 inclusive. In addition, Mr. Hammond has commitments for the period October 19 - 22 inclusive, so that he could not attend a meeting of the Bank's Board prior to October 24. He was then informed that copies of Electroconsult's "Preliminary Report on Right Bank Problems" - September 1961 (KU-D-345), would be furnished to each member of the Board for comment and recommendation.

cc: Messrs. Squire
Spottswood

GAH/agk

CHAIRMAN'S OFFICE
TELEPHONE 25958

DECLASSIFIED
JAN 29 2019
WBG ARCHIVES

FEDERAL POWER BOARD,
P. O. BOX 630,
SALISBURY,
S. RHODESIA.

29th September, 1961.

CONFIDENTIAL.

Michael L. Lejeune, Esq.,
International Bank for Reconstruction
and Development,
1818 H Street, N.W.,
Washington. 25. D.C.

Mr McIvor

*Please draft a
reply & clear with
working party -
al*

I should like to personally thank you and others at the Bank for your very helpful examination of the South Bank abutment problem. Your help has been very reassuring to the Board in its consideration of the matter. Peterson is, of course, in direct communication with Squire about the details. We are still working on a suitable Tariff adjustment, but the outlook is that it need only be comparatively small.

We have also been making a reassessment of the supply to the Copperbelt and we are naturally apprehensive about the continued safety of the intake from the Congo. We have, of course, sufficient capacity to take over the whole of that load at very short notice and for economic reasons we would be very pleased to have it. The security of the single line to the Copperbelt, however, causes some anxiety, and until a second line is built no one would be happy to relinquish the Congo supply, which is now at a level of 50 to 60 megawatts.

Nevertheless, we have come to the conclusion that as a first step we should immediately prepare to instal a third transformer at Kitwe, which would not only provide stand-by but also increase the capacity of the single line considerably. As you know, we have no spare for our two transformers at Kitwe at present, and a serious fault on one of these might mean restricted supply for a year or more due to the lack of repair resources in Southern Africa.

We are at present negotiating with the Copper Mining

/Companies

28 Oct 17/61

29th September, 1961.

Companies to divert to our system approximately an additional 10 megawatts, which would enable us to amortize the investment within the period of our present tariff agreement, i.e. by 1966. The cost of installing the third transformer is estimated to be about £300,000, and if we place the order now we think it could be delivered in about 2 years. We expect to put the matter to Government within the next week.

Strictly this is part of Stage II, and we would wish to treat it as such. We have a reserve of £300,000 against Stage II and we are likely to suggest to Government that we finance half from our Reserve and borrow the other half. This should be in conformity with our agreement, provided you have no objections to our proceeding with this proposal, which looks very advantageous to us.

I should be glad of your purely informal reactions before we take any definitive steps. I should say that the Copper Mining Companies might be prepared to help and have hinted that they would be prepared to underwrite the installation in the interests of placing the order as quickly as possible.

As far as the second line is concerned we have not considered this in any detail, but are proposing to do so in collaboration with the Copper Mining Companies. The cost is likely to be of the order of £5 million and a case of bringing this forward is not so apparent and might depend on a major re-orientation of the Copperbelt's total source of supply. However, I won't enlarge on this until our thinking has progressed beyond this purely preliminary point.

Again thank you very much for your help. Things generally are fairly stagnant, particularly in Southern Rhodesia, but we always hope there will be a break through soon. Load growth in August was fair, but it was an exceptionally cold month and cannot be construed as a turn of the tide.

kindest regards.

Yours sincerely

J. Ward.

J. Ward.

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BANK MAIL ROOM

1961 OCT -3 AM 9:12

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INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

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Mr. Spottswood <i>AS</i>		300	
Mr. Gope <i>AS</i>		813	
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REMARKS			
From P. J. SQUIRE			

GENERAL MANAGER'S OFFICE
TELEPHONE 29231

FEDERAL POWER BOARD,
P. O. BOX 630,
SALISBURY,
S. RHODESIA.

28th September, 1961.

P. J. Squire, Esq.,
International Bank for Reconstruction
and Development,
1818 H Street, N.W.,
Washington, 25. D.C.

Dear Phillip,

KARIBA

Mr. Squire

Further to my letter of the 6th September, 1961, the meeting in London with Paton and Lodigiani was satisfactory, Impresit accepting a reduction of $7\frac{1}{2}\%$ in their quoted rates for excavation underground and 5% on all other rates. The estimated reduction in the contract price as a result of this is expected to be some £108,000.

Unfortunately, though, the Consulting Civil Engineers have now advised me that as a result of further detailed design studies, the design of the thrust block will have to be slightly modified and it is likely that the estimated cost will go up by about 5%. I have, as yet, no details of these proposals.

This is just a personal letter to keep you informed and the Bank will be receiving a formal letter after the Board meeting next week.

Why don't you and Barbara pay us a visit and see the new block for yourselves? The weather here is very pleasant at the moment!

Yours sincerely,

G.R. Peterson
G.R. Peterson.

0-2 Oct. 11/61

RECEIVED

RECEIVED
BANK MAIL ROOM

1961 OCT -2 AM 10:55

TO: DIRECTOR, FEDERAL BUREAU OF INVESTIGATION
FROM: SAC, [illegible]

RE: [illegible]

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September 27, 1961

Mr. John J. Hammond
Consulting Engineer
630 Forest Street
Denver, Colorado

Dear Mr. Hammond:

In accordance with our telephone conversation of the 26th, I am forwarding to your office in Denver the following correspondence and documents concerning the results of the trial load analysis for Kariba Dam, carried out by the consulting engineers, Gibb, Coyne, Sogei (Kariba)(Pvt.) Ltd.

- a) Letter dated September 12, 1961, from Mr. T.A.L. Paton for Sir Alexander Gibb & Partners addressed to the undersigned, transmitting a report on thrust analysis (September 1961) for Kariba Dam South Abutment, with accompanying copy of a paper by V. Mladyenovitch as published in December 1958, and an English translation of the French text. It is necessary to refer to the original text of Mladyenovitch's paper for illustrations.
- b) Letter of September 15, 1961, from Mr. Paton addressed to the undersigned, advising that for the case where the reservoir is full and the load is taken on the abutment block, the direction of the thrust as computed from the trial load analysis is inclined a little downstream as compared with the original assumptions, thus requiring a modification in the position of the thrust block. Drawings are to be forwarded showing the modifications.
- c) Letter of September 15, 1961, from Mr. Paton to Mr. Philip Squire, concerning the detailed report on the results of the trial load analysis, particularly with respect to the amount of the thrust and the direction of the thrust in plan.
- d) Copy of a letter dated August 29, 1961 from Mr. Paton to the undersigned, transmitting a folder of "As Made" drawings relating to the work at the South Abutment (dated August 1961), and a memorandum on "Water Levels during Construction of Abutment Block" (dated August 1961).

September 27, 1961

It will be appreciated if you will review the report showing the results of the trial load analysis for the South Abutment of Kariba Dam with the dam as at present, a water level of 1560 and for the completed abutment with a water level of 1606. After reviewing the report and other data submitted by Gibb, Coyne, Sogei (Kariba) (Pvt.) Ltd., we would like to have you come to Washington to discuss the information that has been submitted by the consultants for Kariba Dam. You will note that the consultants' report contains very little detailed information other than the 14 figures outlining graphically the results of the trial load analysis. You may, however, find that this information is adequate together with the conclusions of the consultants that:

- i) "A reservoir level of 1560 is permissible under present conditions. Consequently, no spilling will be necessary before the beginning of next year.
- ii) "The design assumptions previously made for the abutment block are adequate."

Mr. Paton's two letters of September 15, 1961, however, do state that the direction of the thrust on plan is slightly more downstream than had been assumed, thus requiring minor modifications in the line of the buttresses.

It is requested that the enclosed documents be returned to the Bank after your review has been completed.

Sincerely yours,

Gail A. Hathaway
Engineering Consultant

Enclosures

cc: Messrs. Squire
Spottswood

GAH/agk

7 of R + N - 1145

September 22, 1961

Your Ref. E/3301/38.

T.A.L. Paton, Esq.,
Sir Alexander Gibb & Partners
Queen Anne's Lodge
Westminster
London, S.W.1

Dear Angus:

KARIBA

Many thanks for your letter of September 15, in connection with the results of the trial load analysis, the redesign of the thrust block and the arrangements for proceeding with the work. Your report on the results of the trial load analysis has also arrived.

I note your remarks regarding the question of independent check on the magnitude and direction of the thrusts and I agree, of course, that a delay of up to six months could not be accepted.

Yours sincerely

P. J. SQUIRE

Philip J. Squire

PJSquire:ism

3 sets
enclosed
not ack. 9/19SIR ALEXANDER GIBB & PARTNERS
CONSULTING ENGINEERST. A. L. PATON, C.M.G., B.Sc., M.INST.C.E., F.ASCE., M.I.STRUCT.E.
J. GUTHRIE BROWN, M.INST.C.E., M.I.STRUCT.E., M.I.E.AUST.
R. L. FITT, B.Sc., M.INST.C.E., M.I.STRUCT.E.
M. E. GIBB, M.A., M.INST.C.E., M.ASCE.
L. G. BOOEN, B.Sc., M.INST.C.E., M.I.STRUCT.E.
J. H. LANDER, O.B.E., M.A., M.INST.C.E.
A. D. S. MANGNALL.
K. F. SCOTT, M.C., M.INST.C.E., A.M.N.Z.I.E.
GIBB ASSOCIATES LTD.QUEEN ANNE'S LODGE,
WESTMINSTER,
LONDON, S.W. 1.

PLEASE REFER TO

E/3301/37.

15 September 1961.

CONSULTANTS:
F. W. MATTHEWS, M.INST.C.E., M.I.STRUCT.E., M.INST.C.E.I.
J. K. HUNTER, B.Sc., M.INST.C.E., M.I.MECH.E., M.I.E.E.
H. OLIVIER, C.M.G., M.Sc., Ph.D., M.INST.C.E., F.ASCE.ASSOCIATES:
J. L. DERWAS, B.Sc., M.INST.C.E., M.I.CHEM.E.
H. G. KEEFE, M.INST.C.E., M.I.STRUCT.E.
R. G. T. LANE, B.Sc., M.INST.C.E., M.I.E.AUST.
H. L. FORD, F.R.I.B.A., A.M.T.P.I.Telephones: WHITEHALL 9700
WHITEHALL 0531
Telegrams: GIBBOSORUM LONDONMr. Gail Hathaway,
International Bank for Reconstruction and Development,
1818 H Street N.W.,
Washington 25, D.C.
U.S.A.

Dear Gail.

KARIBA - SOUTH ABUTMENT

Not sent to files.

We refer to the report on the trial load analysis which was sent to you on September 13. You will have noticed that, for the case where the reservoir is full and the load is taken on the abutment block, the direction of the thrust as computed from the trial load analysis is inclined a little downstream as compared with the original assumptions.

For this reason we will be modifying the position of the thrust block. The buttresses will be moved to suit the direction of the thrust and instead of being parallel we propose to provide a small angle between the buttresses, thus giving a block which widens as it gets further from the dam. This will cater for the proper line of thrust and at the same time improve the stability of the block as a whole.

When we have drawings ready copies will be sent to you.

yours sincerely

Angus Paton

aer. Oct. 30/61

095 07-22/81

RECEIVED
BANK MAIL ROOM
John Jordan

1961 *September 12*

Sir:

When the above drawings reach copies will be sent to

the same time include the stipulation of the block as a whole.
This will cover for the proper line of timber and at
the same time a block which means as if sets further from the
blocks to provide a small space between the rafters,
the direction of the timber and instead of being better we
of the timber block. The rafters will be made to suit
for this reason we will be modifying the position

It is completely as compared with the original assumptions
as compared from the first job which is included a
is taken on the spirit level block, the direction of the timber
first, for the case where the location is right and the job
which was sent to you on September 12. You will have noticed
we refer to the report on the first job which

Dear Sir,

KVIBV - SOUTH AFRICA

not sent to you

P.S.A.
Washington 22, D.C.
1818 H Street N.W.
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
WASHINGTON 25, D.C.

Telegrams: GIBBSORUM LONDON
Telephones: WHITEHALL 0931
WHITEHALL 2100

H. G. LORD, F.R.I.B.V., A.M.I.C.E.
E. O. J. GAIN, B.Sc., M.I.C.E., M.I.E.S.
H. G. KEELE, M.I.C.E., M.I.S.T.C.E.
J. F. DEWAS, B.Sc., M.I.C.E., M.I.C.H.E.
ASSOCIATES:
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J. K. HUILE, B.Sc., M.I.C.E., M.I.E.S.C.E., M.I.E.E.
E. M. WATTHEWS, M.I.C.E., M.I.S.T.C.E., M.I.C.E.T.
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J. H. GARDNER, O.B.E., M.A., M.I.C.E.
J. C. BOOBY, B.Sc., M.I.C.E., M.I.S.T.C.E.
M. E. GIBB, M.A., M.I.C.E., M.A.S.C.E.
B. G. ELLI, B.Sc., M.I.C.E., M.I.S.T.C.E.
J. CUNNINGHAM BROWN, M.I.C.E., M.I.S.T.C.E., M.I.E.S.T.
I. A. G. BAYTON, C.M.B., B.Sc., M.I.C.E., F.A.S.C.E., M.I.S.T.C.E.

CONSULTING ENGINEERS

SIR ALEXANDER GIBB & PARTNERS

12 September 1961

12/2201/21

LONDON, S.W. 1

WESTMINSTER

QUEEN ANNE'S LODGE

Mr Spinnwood
Mr Hathaway

SIR ALEXANDER GIBB & PARTNERS
CONSULTING ENGINEERS

T. A. L. PATON, C.M.G., B.Sc., M.INST.C.E., F.ASCE., M.I.STRUCT.E.
J. GUTHRIE BROWN, M.INST.C.E., M.I.STRUCT.E., M.I.E.AUST.
R. L. FITT, B.Sc., M.INST.C.E., M.I.STRUCT.E.
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A. D. S. MANGNALL.
K. F. SCOTT, M.C., M.INST.C.E., A.M.N.Z.I.E.
GIBB ASSOCIATES LTD.

QUEEN ANNE'S LODGE,
WESTMINSTER,
LONDON, S. W. I.

PLEASE REFER TO

CONSULTANTS:
F. W. MATTHEWS, M.INST.C.E., M.I.STRUCT.E., M.INST.C.E.I.
J. K. HUNTER, B.Sc., M.INST.C.E., M.I.MECH.E., M.I.E.E.
H. OLIVIER, C.M.G., M.Sc., Ph.D., M.INST.C.E., F.ASCE.

E/3301/38.

ASSOCIATES:
J. L. DERWAS, B.Sc., M.INST.C.E., M.I.CHEM.E.
H. G. KEEFE, M.INST.C.E., M.I.STRUCT.E.
R. G. T. LANE, B.Sc., M.INST.C.E., M.I.E.AUST.
H. L. FORD, F.R.I.B.A., A.M.T.P.I.

15 September 1961.

Telephones: WHITEHALL 9700
WHITEHALL 0531
Telegrams: GIBBOSORUM LONDON

ack 22 Sep
J

Mr. Philip Squire,
Deputy Director,
Technical Operations Department,
International Bank for Reconstruction and Development,
1818 H Street, N.W.,
Washington 25, D.C.
U.S.A.

Dear Philip

KARIBA. ✓

Further to my letter of 25 August 1961, we are sending to Gail Hathaway our detailed report on the results of the trial load analysis carried out with the assistance of the IBM computer for water levels of 1560 and 1605.

It is satisfactory that in both cases the thrust, 94,000 tons at 1560 water level, and 236,000 tons at 1605 level, are less than what we had provisionally adopted in preparing our preliminary designs.

The direction of the thrust on plan is slightly more downstream than we had assumed. To cover for this we have splayed out slightly the line of the buttresses which transmit the load to sound rock, and have also made a few minor modifications in this section. The construction drawings for the Contractors will be issued with these modifications.

Meetings have been held with the Contractors

during this/....

Letter of sent 12 31/10/61

ack Oct. 30/61

Mr. Philip Squire. IBRD.
Kariba.
15.9.61.

-2-

during this week in Queen Anne's Lodge, at which Dr. G. Lodigiani and other Representatives of Impresit were present as well as Mr. Peterson of the Federal Power Board. As a result of pressure on the Contractors they have agreed to reduce their tender by about 5%. Formal acceptance on behalf of the Board is being given to them by Mr. Peterson so that they can commence the construction work forthwith.

We had a long discussion with Mr. Peterson on the question of whether at this late stage we should obtain a further independent and approximate check on the magnitude and direction of the loads in so far as they affect the design of the thrust block. It was however felt that only by working out an entirely new detailed programme from first principles based on trial load analysis, and having this checked by computer, would any worthwhile results be obtained. This might involve a delay of up to six months before the results would be available and a delay of this magnitude would involve risks which ^{could} not be accepted.

yours sincerely

Angus Paton

P.S. Peterson agreed the draft of this letter and 3 copies of the detailed report have been sent to Hathaway. *JP*

1961 FEB 18 10 30 AM
1961 FEB 18 10 30 AM
RECEIVED

RECEIVED

BANK MAIL ROOM

1961 SEP 18 AM 9:36

1961 SEP 18 AM 9:36

Letter will be forwarded to Board of Directors of IBED. 29.
Report booklet of 20 copies & some
information of this matter.

John J. ...

John J. ...

... be accepted.
... and a delay of time
... of six months
... be
... and making
... of the project block. It was however felt that only
and direction of the loads in so far as they affect the
a further independent and approximate check on the magnitude
the question of whether at this late stage we should obtain
We had a long discussion with Mr. Peterson on

so that they can commence the construction work forthwith.
on behalf of the Board is being given to them by Mr. Peterson
to reduce their tender by about 2%. Further acceptance
as a result of pressure on the contractors they have agreed
present as well as Mr. Peterson of the Federal Power Board.
Dr. C. Goddard and other representatives of Imprest were
during this week in Green Anne, a Lodge, at Milton

J. J. ...
K. J. ...
Mr. ... IBED.

APG *1511-1114*

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

INCOMING WIRE

INTERNATIONAL FINANCE
CORPORATION

DATE OF WIRE: SEPTEMBER 13, 1961 1853
LOG NO.: RC 3
TO: INTBAFRAD
FROM: LONDON

ROUTING
ACTION COPY: TECHNICAL OPERATIONS
INFORMATION COPY: <i>m Squire</i>
DECODED BY:

TEXT:

Oper files.
G.A.H.
25 Sept. 61

FOR HATHAWAY FURTHER OUR CABLE OF 5TH KARIBA TRIAL LOAD
COMPUTATION. REPORT ON CALCULATIONS WITH RESULTS DESPACHED
13TH

GIBBOSORUM

Read 5/20/61
apf

TYPIED

GENERAL FILES
CORRESPONDENCE

SEP 14 8 45 AM 1961

•
•
•

not ack. 9/19

SIR ALEXANDER GIBB & PARTNERS
CONSULTING ENGINEERS

T. A. L. PATON, C.M.G., B.Sc., M.INST.C.E., F.ASCE., M.I.STRUCT.E.
J. GUTHRIE BROWN, M.INST.C.E., M.I.STRUCT.E., M.I.E.AUST.
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H. L. FORD, F.R.I.B.A., A.M.T.P.I.

Telephones: WHITEHALL 9700
WHITEHALL 0531
Telegrams: GIBBOSORUM LONDON

PLEASE REFER TO

4/3301

QUEEN ANNE'S LODGE,
WESTMINSTER,
LONDON, S.W. 1.

12th September, 1961.

Mr. G. Hathaway,
Engineering Adviser,
Technical Operations Department,
International Bank for Reconstruction and Development,
1818 H. Street N. W.,
Washington 25, D. C.

Dear Sir,

KARIBA DAM

sept. 5/61

We confirm having sent you the following telegram on the completion of the calculations for dam thrusts at Kariba :

FOR HATHWAY KARIBA TRIAL LOAD COMPUTATION NOW COMPLETED stop REFERENCE DRAWING 2173 OF SUPPLEMENTARY REPORT THRUST AT JOINT THIRTY IS NINETYFOUR THOUSAND TONS FOR 1560 WATER LEVEL stop FOR FULL RESERVOIR MAXIMUM THRUST ON ABUTMENT IS TWOHUNDRED AND THIRTYSIX THOUSAND TONS stop REPORT ON CALCULATIONS WITH RESULTS FOLLOWS IN ONE WEEK

We are now sending you our report on these calculations which shows the thrusts which will apply at the south abutment of the dam for each of the two conditions -

- (a) with the dam as at present and water level 1560;
- (b) for the completed abutment with water level at 1606.

The accompanying drawings show the values of the thrusts and their lines of action.

The report refers to the solution of the trial load method of analysis for arch dams by the use of equations. This refinement of the original U. S. B. R. method was developed by V. Mladyenovitch and a copy of his paper as published in "Travaux" December, 1958, and an English translation of the text is attached. It will be necessary to refer to the original text for illustrations.

Yours faithfully,

For SIR ALEXANDER GIBB & PARTNERS

T.A. Paton

ack. Oct. 30/61

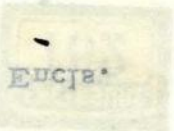
documents
Kariba 95.
96.
97.



Copy to : Mr. S. Aldewereld, Director of Technical Operations
Department - with copy of enclosures.

Department - ~~with copy of enclosure~~
Copy to: Mr. S. Videmerej, Director of Technical Operations

dd
dp
kopya d2
dostavka



RECEIVED

053 09-20/91

FOR SIR ALEXANDER GIBB & PARTNERS
1961 SEP 18

for illustrations.
text is attached. It will be necessary to refer to the original text
"Travail" December, 1958, and an English translation of the
A. Misdelenovitch and a copy of his paper as published in
ment of the original U. S. B. K. method was developed by
of analysis for such dams by the use of equations. This refer-
The report refers to the solution of the trial load method

their lines of action.
The accompanying drawings show the values of the thrusts and

- (p) 1900' for the completed abutment with water level at
- (s) with the dam as at present and water level 1200'

of the dam for each of the two conditions -
which shows the thrusts which will apply at the abutment
We are now sending you our report on these calculations

LOGGONS IN ONE WEEK
LONG STOP BEFORE ON CALCULATIONS WITH RESULTS
ABUTMENT IS TWOHUNDRED AND THIRTY SIX THOUSAND
STOP FOR FIRST BESEKLOIB MAXIMUM THROUST ON
NINE THOUSAND THOUSAND LONG FOR 1200 WATER LEVEL
SUBSEMENTARV BEFORE THROUST AT JOINT THIRTY IS
COMPLETED STOP REFERENCE DRAWING 213 OF
FOR NALHMAV KAVIVA TRIAT LOAD COMPUTATION NOW

the completion of the calculations for dam thrusts at Karpis :
We confirm having sent you the following telegram on

KAVIVA DAM

Dear Sir,

Washington 22, D. C.
1818 N. Street N. W.,
International Bank for Reconstruction and Development,
Technical Operations Department,
Engineering Adviser,
Mr. C. Nathaway,

Telegrams: GIBBOSOPUM LONDON
Telephones: WHITENAGG 0231
WHITENAGG 0200

12th September, 1961

- H. G. LORD, ENG'Y, AM'RY
- B. G. T. GAIE, B.Sc. M'INSTR'CE, M'ET'ALUR'G
- H. C. KEENE, M'INSTR'CE, M'ET'ALUR'G
- J. G. DEWARS, B.Sc. M'INSTR'CE, M'ET'ALUR'G
- ASSOCIATES:
- H. OGILBY, C'IV'IL, M'INSTR'CE, E'NG'N'G
- J. K. HULLER, B.Sc. M'INSTR'CE, M'ET'ALUR'G
- E. W. MATTHEWS, M'INSTR'CE, M'ET'ALUR'G, M'INSTR'CE
- CONSULTANTS:
- GIBB ASSOCIATES LTD.
- K. E. SCOTT, M.C. M'INSTR'CE, AM'RY
- A. D. S. MAIDNALL
- J. H. GUNDER, OBE, MA, M'INSTR'CE
- G. C. BOOBY, B.Sc. M'INSTR'CE, M'ET'ALUR'G
- M. E. GIBB, MA, M'INSTR'CE, M'ET'ALUR'G
- B. G. HILL, B.Sc. M'INSTR'CE, M'ET'ALUR'G
- J. GUTHRIE, B'ROU'N, M'INSTR'CE, M'ET'ALUR'G
- J. A. T. PATON, C'IV'IL, B.Sc. M'INSTR'CE, E'NG'N'G, M'ET'ALUR'G

413301

LONDON, S. W. 1.

WESTMINSTER

QUEEN ANNE'S LODGE

CONSULTING ENGINEERS

SIR ALEXANDER GIBB & PARTNERS

011/009/0110

GENERAL MANAGER'S OFFICE

TELEPHONE 29231

FEDERAL POWER BOARD,

P.O. BOX 630,

SALISBURY,

S. RHODESIA.

MS
Spencer
6th September, 1961

145 RN

Philip J. Squire, Esq.,
International Bank for Reconstruction
and Development,
1818 H Street, N.W.,
WASHINGTON. 25. D. C.

Dear Philip,

✓ Thank you for your letter of the
28th August, 1961, and for the minutes of the
meeting held in Washington on August 14th.

I am going to London next week
for further discussions with Paton and Lodigiani
of Impresit on the programme for the work and
to try to obtain further reductions in price.

I will keep you informed as to what
transpires.

Yours sincerely,

G. R. Peterson
G. R. Peterson.

RN-4145

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

INCOMING WIRE

INTERNATIONAL FINANCE
CORPORATION

DATE OF WIRE: SEPTEMBER 5, 1961 1030

LOG NO.: RC 5

TO: INTBAFRAD

FROM: LONDON

ROUTING

ACTION COPY: TECHNICAL OPERATIONS

INFORMATION
COPY:
DECODED BY:

TEXT:

FOR HATHAWAY KARIBA TRIAL LOAD COMPUTATION NOW COMPLETED. REFERENCE
DRAWING 2173 OR SUPPLEMENTARY REPORT THRUST AT JOINT THIRTY IS NINETYFOUR
THOUSAND TONS FOR 1560 WATER LEVEL. FOR FULL RESERVOIR MAXIMUM THRUST ON
ABUTMENT IS TWOHUNDRED AND THIRTYSIX THOUSAND TONS. REPORT ON CALCULATIONS
WITH RESULTS FOLLOWS IN ONE WEEK

GIBBOSORUM

*Revised/Sent 4/61
/spk*

*cc - mem Squire
Spedding*

ORIGINAL

TYPED

GENERAL FILES
CORRESPONDENCE

SEP 6 8 57 AM 1961



*Files:
Mr. Hathaway's
returning documents
for a few days.*

September 1, 1961

Mr. J. Guthrie Brown
Sir Alexander Gibb & Partners
Queen Anne's Lodge
Westminster
London, S.W.1, England

Dear Mr. Brown:

✓ This is to acknowledge receipt of your letter of August 29, 1961 transmitting the following documents:

- 1. Kariba Hydro-Electric Scheme, Kariba Dam South Abutment, Related "As Made" Drawings and Dam Foundation Rock Levels, August, 1961, Consulting Engineers: Gibb, Coyne, Sogei (Kariba) (Pvt.) Ltd.
- 2. Memorandum on Water Levels During Construction of Abutment Block.

We are very pleased to have the folder of "as made" drawings for the Bank's files and we shall read the note on possible upstream water levels and the effect of gate operation with interest.

Sincerely yours,

Gail A. Hathaway
Engineering Consultant

cc: Mr. Squire
Mr. Spottswood

Kariba Dam to be Strengthened

IN our July issue we noted that a small vein of weak rock in the Kariba dam foundations was being excavated and replaced by concrete. The condition is evidently more serious than was thought originally, for Mr. J. Ward, the Chairman of the Federal Power Board, recently made a long statement on major strengthening works that are shortly to be carried out. According to the statement, it has been known since the start of work at Kariba that treatment of the rock at the upper part of the south flank of the dam would be necessary. The construction programme was put in hand while the detailed geological investigations continued. In the last 18 months work has proceeded on the strengthening of a zone of weaker quartzite in the top part of the south flank by grouting, and also by replacing mica schist with concrete. This work has strengthened the rock considerably but recent tests have shown that, to make certain the south abutment is fully capable of carrying the water pressure at top reservoir levels, further substantial measures will be necessary. The Board's consulting engineers, Gibb, Coyne and Sogei (Kariba), have recommended that the best way to achieve adequate strengthening would be to construct a gravity abutment block to transfer the horizontal thrust from the quartzite at the top down to the sound rock. The block will be 50 ft wide, 90 ft high, and 120 ft long at the top, tapering down to about 20 ft long at the base. It was stated that the work will include 35,000 cu yards of concrete and 25,000 cu yards of rockfill.

The statement added that, although the additional work will increase the cost of constructing Kariba, there will still be a considerable saving on the original estimates despite having heightened the dam by 20 ft and added an extra 330-kV substation. It is likely that the planned rate of decrease in the Board's average selling price for bulk electricity will have to be revised, although no price increase in the near future is anticipated. It will now be more difficult to meet the undertaking given to the World Bank that half the capital required for the second stage of the project would be provided from surplus revenue. It is anticipated that the abutment block will take about 14 months to construct.

In view of this latest development, it would seem that Dr. Jaeger's article on Rock Mechanics, which appears on page 349 of this issue, is particularly appropriate.

August 31, 1961

Mr. Edward B. Burwell, Jr.
P. O. Box 27
Upperville, Virginia

Dear Mr. Burwell:

There is enclosed for your information and file a copy of the minutes of the meeting on Kariba Dam held on August 14, 1961, in Mr. Aldewereld's office. The suggested revisions submitted by the various participants in the meeting have been incorporated in the minutes.

I am forwarding under separate cover by first-class mail eight Kodachrome duplicates of pictures taken during our visit to the Kang Krachan Project in Thailand on May 18, 1961.

Sincerely yours,

Gail A. Hathaway
Engineering Consultant

enclosure

August 31, 1961

Mr. John J. Hammond
630 Forest Avenue
Denver 20, Colorado

Dear Mr. Hammond:

There is enclosed for your information and file a copy of the minutes of the meeting on Kariba Dam held on August 14, 1961, in Mr. Aldewereld's office.

The suggested revisions submitted by the various participants in the meeting have been incorporated in the minutes.

Sincerely yours,

Gail A. Hathaway
Engineering Consultant

enclosure

OUTGOING WIRE

RN-2145

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL FINANCE
CORPORATION

TO: PETERSON
HYDRO
SALISBURY

DATE: August 30, 1961

CLASS OF
SERVICE: LETTER TELEGRAM

RCA

COUNTRY: S. RHODESIA

TEXT:
Cable No.: URCAB 1224 MINUTES AIRMAILED YESTERDAY REGARDS

SQUIRE

0125-101120
Check to advance
service of files

AUG 30 2 19 PM 1961

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MESSAGE AUTHORIZED BY:

NAME Mr. P.J. Squire

DEPT. Technical Operations

SIGNATURE *P. J. Squire*

(SIGNATURE OF INDIVIDUAL AUTHORIZED TO APPROVE)

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(IMPORTANT: See back of yellow copy for guide in preparing form)

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Checked for Dispatch: *P. J.*

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TO: PETERSON
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SALLSBURY

DATE: August 30, 1961

CLASS OF SERVICE: LETTER TELEGRAM

COUNTRY: S. RHODESIA

URGAS 1231 MINUTES AIRMAILED YESTERDAY REGARDS

SQUIRE

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AUG 30 5 53 PM 1961

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MESSAGE AUTHORIZED BY:

NAME - Mr. P. J. Squire

DEPT. Technical Operations

SIGNATURE

(SIGNATURE OF INDIVIDUAL AUTHORIZED TO APPROVE)

iam

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INTERNATIONAL BANK FOR
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INTERNATIONAL FINANCE
CORPORATION

DATE OF WIRE: AUGUST 30, 1961 1608
LOG NO.: RC19
TO: SQUIRE INTBAFRAD
FROM: SALISBURY

ROUTING
ACTION COPY: TECH. OP.
INFORMATION COPY:
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TEXT:

(Kaiba)

1224 MINUTES MEETING PATON WASHINGTON AUGUST FOURTEENTH

NOT YET RECEIVED. GRATEFUL EXPEDITE

PETerson

1961 AUG 30 5 12 PM 1961

ORIGINAL

PY

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

INCOMING WIRE

INTERNATIONAL FINANCIAL COOPERATION

DATE OF WIRE

AUGUST 30, 1961

WIRE NO.

672

TO

SECURE INTERBANK

FROM

SALISBURY

REMARKS

ACTION OFF. TECH. OF.

INFORMATION COPY DELETED BY

1961 MINUTES MEETING BAHAM WASHINGTON AUGUST FOURTEENTH

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PERSON

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CORRESPONDENCE

AUG 30 2 15 PM 1961

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

ROUTING SLIP

Date

19 Sept

NAME

ROOM NO.

Mr. Squire

~~Mr. Hathaway~~

To Handle

appropriate Disposition

Approval

Comment

Full Report

Information

Initial

Note and File

Note and Return

Prepare Reply

Per Our Conversation

Recommendation

Signature

Send On

REMARKS

One set of documents at-
tached. Am holding other
2 sets.

Hathaway will re-
turn Mon. 25th

From

ASD

SIR ALEXANDER GIBB & PARTNERS
CONSULTING ENGINEERS

T. A. L. PATON, C.M.G., B.Sc., M.INST.C.E., F.ASCE, M.I.STRUCT.E.
J. GUTHRIE BROWN, M.INST.C.E., M.I.STRUCT.E., M.I.E.AUST.
R. L. FITT, B.Sc., M.INST.C.E., M.I.STRUCT.E.
M. E. GIBB, M.A., M.INST.C.E., M.ASCE.
L. G. BOOEN, B.Sc., M.INST.C.E., M.I.STRUCT.E.
J. H. LANDER, O.B.E., M.A., M.INST.C.E.
A. D. S. MANGNALL.
K. F. SCOTT, M.C., M.INST.C.E., A.M.N.Z.I.E.
GIBB ASSOCIATES LTD.

QUEEN ANNE'S LODGE,
WESTMINSTER,
LONDON, S. W. I.

PLEASE REFER TO

4/3301

CONSULTANTS:
F. W. MATTHEWS, M.INST.C.E., M.I.STRUCT.E., M.INST.C.E.I.
J. K. HUNTER, B.Sc., M.INST.C.E., M.I.MECH.E., M.I.E.E.
H. OLIVIER, C.M.G., M.Sc., Ph.D., M.INST.C.E., F.ASCE.

ASSOCIATES:
J. L. DERWAS, B.Sc., M.INST.C.E., M.I.CHEM.E.
H. G. KEEFE, M.INST.C.E., M.I.STRUCT.E.
R. G. T. LANE, B.Sc., M.INST.C.E., M.I.E.AUST.
H. L. FORD, F.R.I.B.A., A.M.T.P.I.

Telephones: WHITEHALL 9700
WHITEHALL 0531
Telegrams: GIBBOSORUM LONDON

29th August, 1961.

Mr. G. Hathaway,
Engineering Adviser,
Technical Operations Department,
International Bank for Reconstruction and Development,
1818 H. Street N. W. ,
Washington 25, D. C.

Dear Sir,

KARIBA HYDRO-ELECTRIC SCHEME

... We are now sending you a folder of "As Made" drawings related to the work at the South Abutment. This folder of drawings includes the rock levels for the whole of the dam, "As Made" sections of each of joints Nos. 22 to 44, and a drawing showing the setting out of the dam. A further drawing gives the upstream and downstream elevations of the dam.

... We also enclose a note on possible upstream water levels and the effect of gate operation. These indicate that a high degree of control is possible.

Yours faithfully,
For SIR ALEXANDER GIBB & PARTNERS

J. Guthrie Brown



...

Copy to :

documents Kariba #93
#94

Mr. Aldewereld, Director of Technical Operations Department.

ad. Sept. 1/61

84
83

088 2064-1/1/1

Copy to :

Department:

RECEIVED
BANK MAIL ROOM
Director of Technical Operations

Encls:

1961 SEP -1 AM 10:15

FOR SIR ALEXANDER GIBB & PARTNERS
LONDON ENGLAND

high degree of control is possible.
Levels and the effect of gate operation. These indicate that a
We also enclose a note on possible upstream water

gives the upstream and downstream elevations of the dam,
drawing showing the setting out of the dam. A further drawing
"As Made" sections of each of joints Nos. 22 to 24, and a
drawings includes the rock levels for the whole of the dam,
related to the work at the South Abutment. This folder of
We are now sending you a folder of "As Made" drawings

КАВИВУ НАДВО-ЕЛЕКТРИС SCHEME

Dear Sir,

Washington 22, D. C.
1818 N. Street N. W.
International Bank for Reconstruction and Development,
Technical Operations Department,
Engineering Adviser,
Mr. C. Hatzispyly

Telegrams: GIBBOSOVUM LONDON
Telephones: WHITENAGG 0221
WHITENAGG 0100

28th August, 1961.

- H. G. FORD, B.Sc., A.M.I.C.E.
- B. G. L. GAIN, B.Sc., M.I.E.S.E., M.T.E.A.S.T.
- H. G. KEEFE, M.I.E.S.E., M.T.E.A.S.T.
- J. G. DEWMAS, B.Sc., M.I.E.S.E., M.T.E.A.S.T.
- ASSOCIATES:
- H. OGILBY, C.M.G., B.Sc., B.M.D., M.I.E.S.E., F.A.S.C.E.
- J. K. HUIJER, B.Sc., M.I.E.S.E., M.T.E.A.S.T., M.T.E.E.
- E. W. MATTHEWS, M.I.E.S.E., M.T.E.A.S.T., M.I.E.S.E.T.
- CONSULTANTS:
- GIBB ASSOCIATES LTD.
- K. H. SCOTT, M.C., M.I.E.S.E., A.M.I.C.E.
- A. D. S. WATSON, M.I.E.S.E.
- J. H. GUYDER, OBE, M.A., M.I.E.S.E.
- G. G. BOOBY, B.Sc., M.I.E.S.E., M.T.E.A.S.T.
- M. E. GIBB, M.A., M.I.E.S.E., M.A.S.C.E.
- B. G. LITT, B.Sc., M.I.E.S.E., M.T.E.A.S.T.
- J. GUTHRIE, B.Sc., M.I.E.S.E., M.T.E.A.S.T., M.T.E.A.S.T.
- T. A. G. PATON, C.M.G., B.Sc., M.I.E.S.E., F.A.S.C.E., M.T.E.A.S.T.

4/3301

PLEASE REFER TO

LONDON, S.W. 1

WESTMINSTER

QUEEN ANNES LODGE

CONSULTING ENGINEERS

SIR ALEXANDER GIBB & PARTNERS

From: SIR ALEXANDER GIBB & PARTNERS

QUEEN ANNE'S LODGE
WESTMINSTER, S.W.1

COPY OF LETTER

Mr. G. Hathaway
Mr. Spottiswoode
" Hathaway

4/3301

29th August, 1961.

Mr. G. Hathaway,
Engineering Adviser,
Technical Operations Department,
International Bank for Reconstruction and Development,
1818 H. Street N. W.,
Washington 25, D. C.

Dear Sir,

KARIBA HYDRO-ELECTRIC SCHEME

... v
We are now sending you a folder of "As Made" drawings related to the work at the South Abutment. This folder of drawings includes the rock levels for the whole of the dam, "As Made" sections of each of joints Nos. 22 to 45, and a drawing showing the setting out of the dam. A further drawing gives the upstream and downstream elevations of the dam.

...
We also enclose a note on possible upstream water levels and the effect of gate operation. These indicate that a high degree of control is possible.

Yours faithfully,

For SIR ALEXANDER GIBB & PARTNERS



Copy to: ✓ Mr. Aldewereld, Director of Technical Operations Department.

documents

Kariba #93
#94

COPY

August 28, 1961

Dear George:

We have now had the opportunity to discuss with Mr. Paton the Consultants' proposal for constructing a gravity thrust block on the right abutment at Kariba, and I enclose a note of the meeting which was held here on August 14. You will see that we had Messrs. Hammond and Burwell present, who have given us advice in connection with other arch dams which we are helping to finance and who are no doubt well known to you.

Accepting as we do that the scheme proposed is correct in principle, the purpose of the meeting was to discuss the proposals in detail with a view to ensuring complete safety at all stages of the work and the note should of course be read with that in mind.

I understand from Mr. Paton that the results of the trial load analysis for a water level of 1560 and a water level up to 1605 should be ready for study by about September 5 and we shall then be able to see whether any modification of the design and procedures is necessary. I also understand from Mr. Paton that an independent check from first principles of the thrust on the South Abutment will be arranged.

With kindest regards to you and Beryl,

Sincerely yours,

P. J. SQUIRE

Philip J. Squire

Enclosure

George R. Peterson, Esq.,
General Manager
Federal Power Board
Reliance House
Moffat Street
Salisbury, S. Rhodesia

cc: Mr. T.A.L. Paton, Sir Alexander Gibb & Partners, London.

KARIBAMinutes of Meeting Held on August 14, 1961

Present: Messrs. Aldewereld)		Messrs. Paton - Sir Alexander Gibb
Hathaway)		and Partners
Spottswood)	Bank	Hammond)
Piccagli)		Burwell)
Squire)		Consultants

Mr. Paton reported that representatives of Gibb, Coyne, Sogei had had two meetings with the Contractors, one in Milan on August 5 and one in London on August 10 and 11. Satisfactory agreement had been reached on the detailed method of doing the work, the rates for the work and the program. The Contractors' cost estimates were between 5% and 7% lower than the estimate prepared by Gibb and given to the Power Board. A draft extension to the existing contract with Impresit was ready for submission to the Board.

Work had started on the grout curtain which should be finished by the end of October and this would be followed by the concrete wing wall which should be finished by mid-December. Work had also been released on the two shafts for the upstream buttresses B and C. In accordance with the program, the concreting of the buttresses would be completed as follows:

A1 - end January 1962
 A2 - April 10, 1962
 B - June 10, 1962
 C - April 10, 1962

Mr. Burwell thought this was a tight schedule, bearing in mind the confined working space, but Mr. Paton explained that the timing of the work was based on the actual excavation and concrete filling of the mica seam which was now completed down to elevation 1500.

The question was raised concerning the safety of the dam with the reservoir level at elevation 1560 and allied with this was the method of excavation for and construction of, the buttresses which form part of the gravity thrust block. The discussion also related to possible increased hazards involved in excavation and construction of the gravity thrust block with a reservoir level at or near elevation 1560. Mr. Paton explained that the water level of the reservoir was now elevation 1548. The 1962 flood season could be expected between about mid-February and May or June, and even if the maximum flood of record was experienced the reservoir level would only reach about elevation 1560.

Mr. Hammond emphasized the necessity of determining the resultant angle of thrust, i.e., the resultant of the cantilever action from the water load on the respective blocks being analyzed when combined with the resultant

thrust from the arch action. His concern was with respect to that portion of the dam between joints 30 and 34 (i.e., blocks 30/32 and 32/34) which are seated on sound gneiss and in the calculations are assumed to be acting as an abutment block to withstand thrusts from the upper part of the dam when the water level is 1560. Mr. Hammond stated that in his opinion the resultant thrust of these two loads would fall in the downstream section of blocks 30/32 and 32/34. The exact location of the resultant thrust for the two blocks could only be determined by means of trial load analysis.

Mr. Paton undertook to cable immediately in order to ensure that the trial load analysis both for elevation 1560 and 1605 would cover this. He pointed out that no account had been taken in the preliminary calculations of the blocks beyond joint 34. Although these blocks rested on quartzite they would, nevertheless, contribute to the stability of the dam.

Mr. Hathaway asked whether it would be practicable to lower the reservoir level if the results of the trial load analysis show that it would be unsafe to operate at elevation 1560. Mr. Paton was confident that the analysis would confirm his preliminary calculations which were made on a conservative basis. He further stated that no problem for power generation would arise if the reservoir were lowered to elevation 1540. The jets from the spillway would, however, fall close to the downstream toe, beyond the narrow mattress that has been provided to protect the foundation. He agreed that he would give some further thought to this eventuality and would prepare a plan to be followed in the event that the trial load analysis demonstrated that blocks 30/32 and 32/34 cannot be utilized as an abutment block to withstand thrusts from the upper part of the dam when the water level is at elevation 1560.

Regarding the method of excavation and concreting of the underground portion of the thrust block which would be in the form of buttresses, Mr. Paton explained that the two upstream buttresses would be excavated and concreted from two shafts and a number of adits. This was being adopted as a safety measure to avoid any direct passage for the water round the edge of the dam should a weak zone be encountered. The two downstream buttresses would be excavated and concreted from downstream adits.

In each of the buttresses construction adits would be provided at various levels, the vertical distance between each adit being about 40 feet. The work would be divided into seven or eight zones and the rock would be removed and replaced with concrete in alternate zones to reduce the ground opened up at any one time to a minimum.

The excavation would be done downwards between consecutive adits for a length of approximately 40 to 50 feet in each zone. The excavation would be in 6 to 7 foot lifts, each lift being concrete lined and the lining and rock face held by reinforced concrete struts at 15 to 20 foot centers before proceeding with the excavation in the next lift below. When the excavation reached the next adit about forty feet below the entire open space would be filled with mass concrete before proceeding with the work in the adjoining zone. On completion of the buttresses the contact faces would be grouted under low pressure.

Mr. Hammond and Mr. Burwell queried the support of the exposed rock as the excavation proceeded and expressed the view that the stoping (underground excavation) should take place from the bottom upwards. Mr. Paton explained that the Contractors preferred the proposed method of construction which they felt would give them better overhead protection. The method proposed was the same as that used in excavating and concreting the mica seam and he did not think any insurmountable difficulties of the sort envisaged by Messrs. Hammond and Burwell would arise. He undertook, however, to discuss this question further with the Contractors.

On the question of design Mr. Paton said that the rockfill in the upper part of the gravity block was now abandoned in favor of concrete. This permitted a small reduction in the upper dimensions of the block and had the advantage of allowing the whole block to be tied firmly to the dam with the prestressed steel cables.

With regard to the concrete in the underground portion of the thrust block Mr. Paton confirmed that the buttresses had been located so that the lower portions up to the contact with the underside of the dam were excavated through the quartzite into the gneiss. The more detailed drawings now being prepared would bring out this point.

It was still proposed, however, to leave the two ribs of quartzite between the buttresses under the block. Messrs. Hammond, Burwell and Hathaway felt strongly that these should be removed and replaced with concrete. Mr. Paton pointed out that these quartzite inclusions made no contribution to the support of the block and that their removal and replacement with concrete would only add unnecessarily to the cost of the work.

On the question of leakage, Mr. Paton was relying on the grout curtain for water-tightness. This would be taken down to elevation 1350 and although it could not be guaranteed that there would be leakage, he was confident that it would not be more than could be handled by the well points which would be provided behind the curtain. Mr. Burwell and Mr. Hathaway queried the stability of the wing wall. With the rockfill behind the wall there might well be danger of slide failure under conditions of maximum draw-down and the necessity of good foundations for the wall was stressed. Mr. Paton said that the design of the wall had not yet been finalized and he would see that these comments were taken into account. In conclusion it was agreed that the two trial load analyses were essential to confirm the approximate calculations on the stability of the dam and thrust block at the South Abutment. Mr. Paton promised to send to the Bank more detailed drawings of the scheme, both in its final design and in the various stages of construction. He will also send complete record drawings of the dam as completed to date.

August 28, 1961

August 28, 1961

T.A.L. Paton, Esq.,
Sir Alexander Gibb & Partners
Queen Anne's Lodge
Westminster
London, S.W.1

Dear Angus:

KARIBA

I was glad to have your letter of August 25, and note that you have reached agreement with your colleagues to obtain a check from first principles of the thrust on the South Abutment. I note also that we may expect the drawings which we requested within the next few days.

It has taken a little time to get the minutes of our meeting held on August 14 finally agreed, but I now enclose a copy and also a copy of the letter which I have today written to George Peterson.

Sincerely yours,

Philip J. Squire

Enclosures

RN-1145

ALL COMMUNICATIONS TO BE ADDRESSED TO THE FIRM

SIR ALEXANDER GIBB & PARTNERS
CONSULTING ENGINEERS

DECLASSIFIED
JAN 29 2019
WBG ARCHIVES

Mr. Hathaway
Noted.
G.A.H. 29 Aug 61

QUEEN ANNE'S LODGE,
WESTMINSTER,
LONDON, S.W. 1.

T. A. L. PATON, C.M.G., B.Sc., M.INST.C.E., F.ASCE., M.I.STRUCT.E.
J. GUTHRIE BROWN, M.INST.C.E., M.I.STRUCT.E., M.I.E.AUST.
R. L. FITT, B.Sc., M.INST.C.E., M.I.STRUCT.E.
M. E. GIBB, M.A., M.INST.C.E., M.ASCE.
L. G. BOOEN, B.Sc., M.INST.C.E., M.I.STRUCT.E.
J. H. LANDER, O.B.E., M.A., M.INST.C.E.
A. D. S. MANGNALL.
K. F. SCOTT, M.C., M.INST.C.E., A.M.N.Z.I.E.
GIBB ASSOCIATES LTD.

PLEASE REFER TO

E/3301/16.

CONSULTANTS:
F. W. MATTHEWS, M.INST.C.E., M.I.STRUCT.E., M.INST.C.E.I.
J. K. HUNTER, B.Sc., M.INST.C.E., M.I.MECH.E., M.I.E.E.
H. OLIVIER, C.M.G., M.Sc., Ph.D., M.INST.C.E., F.ASCE.

ASSOCIATES:
J. L. DERWAS, B.Sc., M.INST.C.E., M.I.CHEM.E.
H. G. KEEFE, M.INST.C.E., M.I.STRUCT.E.
R. G. T. LANE, B.Sc., M.INST.C.E., M.I.E.AUST.
H. L. FORD, F.R.I.B.A., A.M.T.P.I.

Telephones: WHITEHALL 9700
WHITEHALL 0531
Telegrams: GIBBOSORUM LONDON

25 August 1961.

reply 29 August
[Signature]

Open files
G.A.H.

CONFIDENTIAL.

Mr. Philip Squire,
Deputy Director,
Technical Operations Department,
International Bank for Reconstruction and Development,
1818 H Street N.W.,
Washington 25, D.C.
U.S.A.

Dear Philip.

KARIBA

I thought I should let you know the following:

1. We hope to send to Gail Hathaway in a few day's time a complete set of the As-Made drawings of the dam giving the full dimensions, foundation levels, etc. At the same time we will be sending him a memorandum giving the details of what can be done to draw down the reservoir level should there be any doubt on the stability of the South Abutment with a water level of 1560, which is the level likely to be reached with a flood of record in the 1962 flood season.
2. The results of the trial load analysis for a water level of 1560 and a water level up to a maximum of 1605 should be completed with the assistance of an IBM Computer about September 5. As soon as we have studied the results we hope within a few days to send the details to Gail Hathaway for his and Hammond's consideration.

3. We have/.....

Confidential.

Mr. Philip Squire, IBRD.
25 August 1961.

-2-

3. We have agreed with our colleagues, Coyne & Bellier, to obtain a check from first principles of the thrust on the South Abutment. We have not, however, finalised who will do the job as it depends on availability and timing. I will let you know in due course what has been arranged. But the principle is agreed.
4. One of our senior quantity surveyors is at Kariba with details of the Contractor's rates for discussion with, and approval by, the Federal Power Board. We hope that this will be cleared in the next few days.

Yours sincerely

Angus Paton

Mr. P. J. Squire

August 23, 1961

Gail A. Hathaway:

Kariba - Clearance with Mr. Hammond of Minutes of Meeting Held August 14, 1961

Mr. Hammond was called on the telephone concerning approval of the Minutes for the Kariba meeting held on August 14, 1961. When I informed Mr. Hammond that the office had not received comments or approval of the Minutes, he stated that it was not his understanding that the office expected him to comment or give his approval. I then explained that we would like to have his reactions to some revisions that had been made in the copy given to him while in Washington. The revised copy was read to him and I pointed out each change made in the original draft. Mr. Hammond fully concurred in the changes as set forth in the draft dated August 16, 1961.

Keiba

EDWARD B. BURWELL, JR.
CONSULTING ENGINEERING GEOLOGIST
P. O. BOX 116, UPPERVILLE, VA.
TEL. 703-592-3351

August 17th, 1961

Mr. Philip J. Squire
Assistant Director
Technical Operations Department
International Bank for Reconstruction
and Development
1818 H. Street, N. W.
Washington 25, D. C.

Dear Mr. Squire:

The minutes of our meeting with Mr. Paton in Washington on August 14, 1961, transmitted with your letter of August 15th, have been read and found satisfactory with one exception, which relates to Mr. Hammond's comment as recorded in sentence five of the last paragraph on the first page of the minutes. I believe Mr. Hammond's comment referred to the direction of the resultant of the forces imposed by the water load and the arch thrust.

Sincerely yours,

Edward B. Burwell, Jr.
Edward B. Burwell, Jr.


RECEIVED
BANK MAIL ROOM
1961 AUG 18 AM 9:51

COMMUNICATIONS SECTION
U.S. AIR FORCE
COMMUNICATIONS CENTER
WASHINGTON, D.C.

OFFICE MEMORANDUM

TO: Files

DATE: 17 August 1961

FROM: E. P. Delany 

SUBJECT: Kariba

The following two telegrams were received from Sir Alexander Gibb and Partners on August 17.

1. LON 119 FOR DELANY TOD FOR PATON JOB 3301 STOP CALCULATIONS FOR TRIAL LOAD PREPARED FOR LEVELS ~~1440~~/1538 AND 1606 AND COMPUTER ANALYSIS AVAILABLE BY ABOUT FIRST SEPTEMBER ENABLING ESTIMATE OF FORCES FOR 1560 WATERLEVEL BY INTERPOLATION STOP SHOULD GIVE SATISFACTORY ANSWER STOP DIRECT CALCULATION AND COMPUTER ANALYSIS FOR 1560 POSSIBLE AS ALTERNATIVE BUT RESULT NOT AVAILABLE BEFORE MIDSEPTEMBER PLEASE STATE PREFERENCE
2. LON 152 FOR DELANY TOD FURTHER TO OUR LON 119 PLEASE ADVISE HATHAWAY WE PROPOSE TO DO BOTH SERIES COMPUTER PROGRAMMES DESCRIBED STOP THEREFORE ESTIMATE OF FORCES AT 1560 BY INTERPOLATION WILL WE HOPE BE SUBMITTED TO HIM DURING FIRST WEEK SEPTEMBER AND SECOND COMPUTER ANALYSIS ABOUT END OF SEPTEMBER AS AVAILABILITY OF COMPUTER MAY BE AFFECT BY OTHER USERS STOP PLEASE SHOW HATHAWAY BOTH CABLES

1961 AUG 18 6H 3: 52

RECEIVED

16th August 1961

The Secretary,
Federal Power Board,
Reliance House,
Moffat Street,
P.O. Box 630,
SALISBURY,
S. Rhodesia.

Dear Sir,

Kariba Loan

I write to acknowledge with thanks your letter (144/1) dated 9th August to the Managing Director, Commonwealth Development Finance Company Ltd., concerning the Report by the Board's consulting civil engineers that substantial additional measures should be taken to ensure the stability of the south bank abutment of the dam at Kariba. We note that the International Bank for Reconstruction and Development, after considering the consultants' Report, have concluded that the consultants' proposal involving construction of a thrust block appears to be the only acceptable solution.

We note also that studies have been undertaken to assess the effect of the increased capital expenditure on the Board's financial operating results, and that these will be sent to us when they have been completed.

Yours faithfully,

W.H.J. Christie
General Manager

Copies to:

Mr. Meinertzhagen, Colonial Development Corporation
Mr. Lejeune, International Bank for Reconstruction & Development

WHJC/MW

AMTC/WA

Ил. Гезенде' Инженеринг Банк хол консорциумтон ы делегацияны
Ил. Инженеринг Банк хол консорциумтон делегацияны
Собхан со:

Селекту Жолбор
М.Н.И. Силесте

Холго Гезенде' Инженеринг Банк хол консорциумтон

реел сомбулдег
Селекту Жолбор, Инженеринг Банк хол консорциумтон ы делегацияны
Собхан со: реел сомбулдег
Селекту Жолбор, Инженеринг Банк хол консорциумтон ы делегацияны
Собхан со:

со ре ре онга мессажерге элдертон
Селекту Жолбор, Инженеринг Банк хол консорциумтон ы делегацияны
Собхан со: реел сомбулдег
Селекту Жолбор, Инженеринг Банк хол консорциумтон ы делегацияны
Собхан со:

Холго Гезенде' Инженеринг Банк хол консорциумтон

Собхан со:

3* Бродерге
Инженеринг Банк хол консорциумтон
Селекту Жолбор
Инженеринг Банк хол консорциумтон
Селекту Жолбор
Инженеринг Банк хол консорциумтон

RECEIVED
BANK MAIL ROOM

Селекту Жолбор

1961 AUG 18 PM 3:25

ВН. 4 112

(Kariba)

August 15, 1961

Mr. Edward B. Burwell, Jr.
P. O. Box 27
Upperville, Virginia

Dear Mr. Burwell:

It was a very great pleasure to see you again yesterday, and as promised I attach a note of our meeting. Although this has been single-spaced it is in fact a first draft, so please feel free to make any amendments you consider necessary.

I look forward to hearing from you.

Sincerely yours,

Philip J. Squire
Assistant Director
Technical Operations Department

Encl.

PJSquire:ism

Telephone conversation, August 11, 1961, John J. Hammond to G.A. Hathaway

- GAH: What conclusions did you arrive at?
- JJH: I went through that setup they have. They checked it but that is not all of it.
- GAH: You mean the one on drawing showing resultant going through Block 34.
- JJH: You have to take those two together on upstream face which will cause the resultant down stream.
- GAH: Your trial load analysis would bring that out.
- JJH: I doubt if it would fall outside the dam, but it would fall on the downstream side. I think they made a typographical error on last drawing-- 45,000 lbs. water thrust. It should be 450,000 lbs.
- GAH: Would that make any difference in the resultant on that particular drawing?
- JJH: I think they took that into consideration. I think they would have to go through that thing and I doubt whether the stability is suitable for those two forces.
- GAH: When they finish their trial load analysis they will probably come to the same conclusion. They cannot rely on the 2 blocks 32 and 34.
- JJH: I don't believe it is going to be suitable.
- GAH: The water level would have to be lower.
- JJH: Yes
- GAH: That's right. It could never go up to 1560. They are within 12 feet of that now.
- JJH: Besides, when they get down in it work it will weaken the whole structure.
- GAH: Do you have any other observations on it?
- JJH: No. Went through the computations and checked them. It is alright, just what they have but it is not sufficient.
- GAH: When you were make conclusions you used 45,000 and that was what cause you the trouble. With 450,000 it comes to a more reasonable figure.
- JJH: Yes
- GAH: If there are any other things that come up later. I have meeting at 2 p.m. and may call you back.

RN-145

FEDERAL POWER BOARD

Central file

P.O. Box 630

TEL. 25958
20556

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

RELIANCE HOUSE,

MOFFAT STREET,

SALISBURY,

S. RHODESIA.

142 (181)

9th August, 1961

Director of Operations,
Department of Operations,
Europe, Africa and Australasia,
International Bank for Reconstruction
and Development,
1818, H. Street, N.W.,
WASHINGTON, 25. D.C.

Dear Sir,

LOAN 145 RN - KARIBA PROJECT

I refer to the letter dated 14th July, 1961 written from London to Mr. Lejeune by Mr. Ward, Chairman of the Federal Power Board, in which he referred to recommendations made in a report by Gibb, Coyne, Sogei (Kariba) (Pvt.) Ltd., the Board's consulting civil engineers, that substantial additional measures should be taken to ensure the stability of the south bank abutment of the dam at Kariba. Copies of the report, which was entitled "Report on Kariba Dam South Abutment, July, 1961", were also sent with Mr. Ward's letter.

I refer also to Mr. Lejeune's telegram dated 21st July, 1961, which read as follows :-

"RE YOUR LETTER JULY FOURTEEN BANKS TECHNICAL EXPERTS
AND ADVISORS HAVE REVIEWED CONSULTANTS REPORT STOP
WE CONCLUDE THAT BASIC PROPOSAL BY CONSULTANTS
INVOLVING CONSTRUCTION OF THRUST BLOCK APPEARS TO BE
ONLY ACCEPTABLE SOLUTION".

The report was studied by the Federal Power Board at meetings held after Mr. Ward's return to Salisbury and, on 25th July, the Board approved the adoption of the recommendations made in the report on the grounds that no risks could be taken and that the solution proposed appeared to be the best and cheapest in the circumstances. Although the final cost of the scheme is estimated still to be within the estimate on which Stage I of the Project, as amended, was commissioned, the Board is, nevertheless, disappointed that the savings will not be as great as expected before this additional work was proposed.

/ The Board

RECEIVED
BANK MAIL ROOM

1961 AUG 14 AM 11:25

Faint, illegible text, possibly a header or introductory paragraph.

REPORT

Faint, illegible text, possibly a sub-header or first paragraph.

Faint, illegible text, possibly a main body paragraph.

Faint, illegible text, possibly a second main body paragraph.

J. W. (J.W.)

2/13/61

FEDERAL BUREAU OF INVESTIGATION

U. S. DEPARTMENT OF JUSTICE

Director of Operations,
Europe, Africa and Australasia,
International Bank for Reconstruction
and Development,
WASHINGTON, D.C.

9th August, 1961

The Board further authorised the consulting engineers to negotiate with Impresit for the work to be undertaken as an extension of the Main Civil Engineering Contract, No. C.2, subject to the rates being fair and reasonable and comparable where possible with those included in the Bill of Quantities for the main civil engineering contract.

It would be in the Board's interest if Impresit undertook the work, because the company is deployed at site and has knowledge of the area and the work required. It is important, in view of the measures to be taken and the timing of the programme, as referred to in Chapter VI of the report, that work should begin as soon as possible. The work will, however, not be authorised until the Board has examined Impresit's rates.

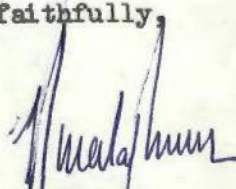
The other external lenders were made aware by Mr. Ward while he was in London of the work likely to be necessary to stabilise the south bank, and letters similar to this are being sent to the Colonial Development Corporation and the Commonwealth Development Finance Company Ltd.

I think you might like to know that information in regard to the measures to be taken has already been released to the Press and it is likely that there will be a debate on the subject in the Federal House of Assembly during the present week.

Studies have been going on to assess the effect of the increased capital expenditure on the Board's financial operating results. I will send these to you when they have been completed and when the Board has considered any necessary steps to increase revenue by tariff adjustments.

I should like to add that I wrote to the Public Utilities Division of the Bank's Department of Technical Operations about the measures which were put in hand last year and which proved inadequate in my letter, No. C.2/24(85) of 16th July, 1960.

Yours faithfully,


SECRETARY

cc Pincagli
Baltuch/Fondem
Verheijen

RJH/ZS

August 8, 1961

Mr. Angus Paton
Sir Alexander Gibb & Partners
Queen Anne's Lodge
Westminster, London, S.W.1,
England

Dear Angus:

Many thanks for your letter of August 3 summarizing the current situation with respect to the water weed salvinia Auriculata on Kariba Lake, and transmitting a copy of your report on provision for clearing the weed growth from the approaches to Kariba dam dated June, 1961, and the Federal Power Board report entitled "The Incidence of the Water Weed Salvinia Auriculata on Kariba Lake in Relation to the Power Station", dated May, 1961.

Your cooperation in furnishing information about the water weed on Kariba Lake is most sincerely appreciated.

Sincerely yours,

Gail A. Hathaway
Engineering Consultant

August 8, 1961

Mr. Angus Paton
Sir Alexander Gibb & Partners
Queen Anne's Lodge
Westminster, London, S.W.1,
England

Dear Mr. Paton:

This is to acknowledge receipt with thanks of your letter of August 4 transmitting a Supplementary Report dated August 4, 1961 on the various questions raised about Kariba south abutment. Mention is made in the report that trial load analyses are now being made to determine the arch thrusts that must be taken care of by the south abutment thrust block, and that the final results should be available by the end of August. We shall, of course, be interested in the results of these computations.

Sincerely yours,

Gail A. Hathaway
Engineering Consultant

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT	INCOMING WIRE	INTERNATIONAL FINANCE CORPORATION
--	---------------	--------------------------------------

DATE OF WIRE: AUGUST 4, 1961 - 1345

LOG NO.: RC 19

TO: INTBAFRAD

FROM: LONDON

ROUTING
ACTION COPY: TECH. OPS.
INFORMATION COPY:
DECODED BY:

Sharon Aldewereld & Hathaway
Aug 4, 1961
EPD
file
Jibb

TEXT:

LON 138 FOR DELANY TOD

PLEASE ADVISE ALDEWERELD AND HATHAWAY TWO COPIES SUPPLEMENTARY REPORT KARIBA DEALING WITH ALL QUERIES RAISED HATHAWAY POSTED TODAY. FURTHER REPORT WILL FOLLOW DISCUSSIONS WITH CONTRACTORS ON CONSTRUCTION PROGRAMME AND UNIT RATES DURING THIS WEEKEND MILAN AND NEXT WEEK LONDON. CONFIDENT TODAYS REPORT JOINTLY PREPARED WITH COYNES SHOULD DISPOSE ALL QUERIES ON TECHNICAL ASPECTS

PATON

LJ

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

TELECOMMUNICATIONS

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

DATE OF
FILING
LOG NO.
TO
FROM

AUGUST 4, 1961 - 1342

FC ID

INBARBAD

LONDON

RECEIVED BY
DATE
ACTION OFFICER
TECH. OFFICER

Handwritten notes:
The following is a list of the
items which have been
checked off by the
staff.

FOR DELIVERY TO

PLEASE ADVISE ALDERBURY AND HATWAY TWO COPIES SUPPLEMENTARY
REPORTS BEING DRAFTED WITH ALL QUERIES RAISED HATWAY NOTED
TODAY. FURTHER REPORT WILL FOLLOW DISCUSSIONS WITH CONTRACTORS
ON CONSTRUCTION PROGRAMME AND UNIT RATES DURING THIS WEEKEND
MILAN AND NEW YORK. COMMITMENT TODAY'S REPORT JOINTLY
PREPARED WITH COPIES SHOULD DISPOSE ALL QUERIES ON TECHNICAL

ASSETS

PARSON

TYPED
GENERAL FILES
CORRESPONDENCE

AUG 4 2 25 PM 1961

SIR ALEXANDER GIBB & PARTNERS

CONSULTING ENGINEERS

T. A. L. PATON, C.M.G., B.Sc., M.INST.C.E., F.ASCE., M.I.STRUCT.E.
J. GUTHRIE BROWN, M.INST.C.E., M.I.STRUCT.E., M.I.E.AUST.
R. L. FITT, B.Sc., M.INST.C.E., M.I.STRUCT.E.
M. E. GIBB, M.A., M.INST.C.E., M.ASCE.
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J. H. LANDER, O.B.E., M.A., M.INST.C.E.
A. D. S. MANGNALL.
K. F. SCOTT, M.C., M.INST.C.E., A.M.N.Z.I.E.
GIBB ASSOCIATES LTD.

CONSULTANTS:

F. W. MATTHEWS, M.INST.C.E., M.I.STRUCT.E., M.INST.C.E.I.
J. K. HUNTER, B.Sc., M.INST.C.E., M.I.MECH.E., M.I.E.E.
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H. L. FORD, F.R.I.B.A., A.M.T.P.I.

Telephones: WHITEHALL 9700
WHITEHALL 0531
Telegrams: GIBBOSORUM LONDON

QUEEN ANNE'S LODGE,
WESTMINSTER,
LONDON, S. W. I.

PLEASE REFER TO

E/3301/966.

4 August 1961.

CONFIDENTIAL.

Mr. Gail Hathaway,
International Bank for Reconstruction and Development,
1818 H Street, N.W.
Washington 25, D.C.
U.S.A.

Dear Hathaway,

KARIBA.

Following your telephone conversations with Guthrie Brown and myself, I am now sending you a Supplementary report dated August 4 on the various questions raised about the Kariba South Abutment. I hope you will find the answers are given in sufficient detail but if there is any further information you require please do not hesitate to let me know.

You will see in our memorandum that we are having meetings with the Contractors on August 5 and again on August 10. As soon as the programme and method of construction of the work has been finalised in more detail with the Contractor I will let you have a note on this aspect.

Yours sincerely,

Angus Paton

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SIR ALEXANDER GIBB & PARTNERS
CONSULTING ENGINEERS

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H. L. FORD, F.R.I.B.A., A.M.T.P.I.

E/3301/960.

August 3, 1961.

Telephones: WHITEHALL 9700
WHITEHALL 0531
Telegrams: GIBBOSORUM LONDON

CONFIDENTIAL.

Mr. Gail Hathaway,
International Bank for Reconstruction and Development,
1818 H Street, N.W.
Washington 25, D.C.
U.S.A.

Dear Gail .

KARIBA LAKE WEED

With reference to your telephone conversation with me on the 1st August, I have now obtained the latest position on the water weed salvinia Auriculata on Kariba Lake. The problem of dealing with the Lake weed is no direct concern of ours except in so far as it may affect the hydro-electric power station. We were asked by the Federal Power Board to prepare a report on provision for clearing the weed growth from the approaches to the Kariba Dam and I enclose a copy of our Report dated June 1961. I also enclose a document entitled "The Incidence of the Water Weed Salvinia Auriculata on Kariba Lake in Relation to the Power Station" dated May 1961, which we received from Mr. Bruce, the Chief Civil Engineer of the Federal Power Board. It is not clear who is the author of this report.

doc # 106

doc # 107

In addition to the above, I asked our Chief Engineer in Salisbury to cable me the latest information, which is as follows:-

1. The present coverage of Lake weed is now estimated to be approximately 240 square miles, compared with 170 square

miles in/.....

240 170 8141

Mr. Gail Hathaway,
3 August 1961

-2-

miles in 1960. The surface area of the Lake is at the moment about 1500 square miles.

2. A considerable parasite growth of sedge grass is occurring and there is certain evidence of older growths dying and sinking.
3. Government experimental ponds are conducting trials with over 50 chemicals from world-wide sources and improving results indicate an answer is possible but costs undesirably high. In addition, trial aerial spraying is anticipated during next month.
4. Methods of mechanical removal are still being considered but are in the early stages.
5. Enquiries regarding possible marine life which will consume the weed but are not at present promising.
6. Proposals for commercial use have subsided in recent months.
7. Possibility that under full Lake conditions equilibrium at a satisfactory level will be achieved naturally.
8. Density varies from one pound per square yard in primary stage grow to 40 pounds in tertiary stage growth. The water content is approximately 80%.

From my own observations and discussions during my visit last week to Kariba most of the Lake weed is at the upper end of the Lake away from the Power Station. There are, however, small areas of weed in some of the inlets close to the Kariba Gorge but the area of these growths do not appear to be increasing at any great rate. From time to time small patches of weed drift towards the boom across the Kariba Gorge and are then pushed to one side. The Board have approved certain improvements to the boom by fixing plastic sheets on the upstream face in accordance with our report. This work is being put in hand immediately.

BANK MATH BOOM
RECEIVED

I suggest/.....

1961 AUG -7 AM 11:20

being immediately.
I see in accordance with our report. This work is being done in
involvement to the room by fixing basic sheets on the surface
then changed to one side. The basic rule applied certain
of meed drift towards the room across the kitchen table and the
increasing it will least late. How time to time small between
table and the size of these elements do not appear to be
small areas of meed in some of the joints close to the kitchen
end of the table small from the lower station. There are, however,
that last week to kitchen most of the table meed is at the other
How will own operations and discussions during will

water content is approximately 80%.
8* size from to 40 bonds in certain size element. The
beneficial water from one bond per square yard in British

it is satisfactory level will be considered satisfactory.
A* Possibility that under this table conditions adjustment

months.
e* proposals for commercial use have appeared in recent

contains the meed and the not at present blowing.
2* Endless research possible within the market will

conducted and the in the early stages.
4* Methods of mechanical removal are still being

establishing is anticipated during next month.
costs approximately 1000. In addition, first series
involving results indicate an answer is possible and
with over 20 specimens from world-wide sources and
3* Government experiments bonds are conducting first

elements during and during.
occasionally and there is certain evidence of order.
5* A comparative balance element of each class is

at the moment about 1200 square miles.
miles in 1960. The surface area of the table is

2 August 1961
ML. GAT HANSMAN

Mr. Gail Hathaway.
3 August 1961.

-3-

I suggest that if any information is required officially by the Bank on the Lake weed it would be desirable for you to write direct to the Federal Power Board. But I hope that the enclosed details will be of assistance to you in your consideration of the matter.

Yours sincerely

Angus Paton

Encls.

RECEIVED
BANK MAIL ROOM
RN 145
AUG 5 - 3 04 1961

SIR ALEXANDER GIBB & PARTNERS
CONSULTING ENGINEERS

T. A. L. PATON, C.M.G., B.Sc., M.INST.C.E., F.ASCE., M.I.STRUCT.E.
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GIBB ASSOCIATES LTD.

QUEEN ANNE'S LODGE,
WESTMINSTER,
LONDON, S. W. I.

PLEASE REFER TO

CONSULTANTS:
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H. L. FORD, F.R.I.B.A., A.M.T.P.I.

E/3301/967.

4 August 1961.

Telephones: WHITEHALL 9700
WHITEHALL 0531
Telegrams: GIBBOSORUM LONDON

CONFIDENTIAL.

Mr. S. Aldewereld,
International Bank for Reconstruction and Development,
Technical Operations Department,
1818 H Street, N.W.
Washington 25, D.C.
U.S.A.

Dear Sien

KARIBA.

I thought I should let you know that we have posted to-day to Gail Hathaway a copy of a Supplementary Report, covering the various questions raised by Hathaway on the Kariba South Abutment. I hope he will find the answers are given in sufficient detail to clear the points the Bank have raised on this matter.

If it would serve any useful purpose I should be very glad indeed to come out to Washington to discuss the matter with Hathaway and yourself. Such a visit might be combined with the visit Olivier and Crow are making at the middle of this month on the Indus. They were due to arrive in Washington about 18 August and then proceed to Denver for discussions with Tipton and Kalmbach. Perhaps you would let me know if this would be of assistance. If you gave Delany a message he could transmit it on to me.

Yours sincerely
Angus Paton

RECEIVED
BANK MAIL ROOM

1961 AUG - 7 AM 9:45

ALL COMMUNICATIONS TO BE ADDRESSED TO THE FIRM

SIR ALEXANDER GIBB & PARTNERS

CONSULTING ENGINEERS

T. A. L. PATON, C.M.G., B.Sc., M.Inst.C.E., F.A.S.C.E., M.I.Struct.E.
J. GUTHRIE, B.Sc., M.Inst.C.E., M.I.Struct.E., M.I.E.Aust.
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QUEEN ANNE'S LODGE,

WESTMINSTER,

LONDON, S.W. 1.

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H. L. FORD, F.R.I.B.A., A.M.T.R.I.

Telegrams: GIBBORUM LONDON
Telephones: WHITEHALL 0231
WHITEHALL 9700

13301/961

4 August 1961.

CONFIDENTIAL.

U.S.A.
Washington 25, D.C.
1818 H Street, N.W.
Technical Operations Department,
International Bank for Reconstruction and Development,
Mr. S. Albedweld,

KARIBA.

Dear Sir

I thought I should let you know that we have posted today to Gail Hathway a copy of a supplementary report covering the various questions raised by Hathway on the Kariba South Abutment. I hope he will find the answers are given in sufficient detail to clear the points the Bank have raised on this matter.

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Yours sincerely
Alexander Gibb

OFFICE MEMORANDUM

TO: Files

DATE: August 1, 1961

FROM: Gail A. Hathaway *G.A.H.*

SUBJECT: Kariba Dam - South Abutment

Mr. T.A.L. Paton, Senior Partner of Sir Alexander Gibb and Partners, was called by telephone on Tuesday morning, August 1, to inquire specifically regarding (i) the extent of the aquatic growth in the reservoir and its effect upon the operation of the hydroelectric plant, and (ii) to ask if the Bank could have a copy of the calculations upon which the determination was made that the dam is safe with a water surface in the reservoir at RL 1560. Mr. Paton was informed that there was considerable concern in the Bank regarding the aquatic growth in the reservoir as well as the method of determining by calculation the safety of the dam at RL 1560 when the results of the jacking tests were so unfavorable. In other words, why is the dam unsafe at RL 1590 and safe at RL 1560, just 30 feet below the maximum retention level?

Mr. Paton explained that the aquatic growth was all at the upper end of the lake with very little at the lower end by the dam. (Mr. Bass reported that the aquatic growth was most extensive in the middle portion of the reservoir as the upper end was too shallow for it to survive.) Mr. Paton stated that they have taken precautions against the aquatic growth flowing into the turbines by building a log boom at the end of the gorge above the dam with plastic sheets fitted to the boom and a motor boat to push the growth away. He stated that the question of handling the aquatic growth was outside the terms of reference of the consultants and that they had nothing to do with the lake. However, the consultants have taken steps to see that very little of the vegetation comes into the gorge. He did not think that it was going to be a problem. There are about five teams of scientists working on different methods to kill the growth. The Federal Power Board is worried about using poisons to kill the growth because of its harmful effect upon fish life. Mr. Paton emphasized that this question should be explored with the Federal Power Board because it is entirely outside the scope of work of the consultants.

In reply to the request for a copy of the calculations showing that the dam is safe up to RL 1560 Mr. Paton stated that they would furnish the Bank with a copy and they planned to get a full report on all the questions raised by the Bank into the mail by the end of this week.

cc: Mr. S. Aldewereld
Mr. A.D. Spottswood
Mr. M. Lejeune

OFFICE MEMORANDUM

TO: Files

DATE: July 31, 1961

FROM: Gail A. Hathaway *Gadh*

SUBJECT: Kariba Dam - South Abutment

Mr. Guthrie Brown of Sir Alexander Gibb & Partners was called by telephone on Monday morning, July 31, to inquire as to the status of the report that the firm is preparing for the Bank in reply to questions asked concerning procedures to be followed in constructing the south abutment thrust block at Kariba dam. Inquiry was also made of Mr. Brown regarding action taken by the Federal Power Board on July 26.

Mr. Brown stated that they were busy dealing with the various points raised on July 24 (see memo to files dated July 26, 1961) and hoped to have a report in the mail by the end of the week. He stated that they had a pretty good answer to all the queries and believed that they would be able to satisfy the Bank without any trouble.

Mr. Brown reported that Mr. Paton had just returned to the office from the trip to Kariba and that he was busy going into the Kariba dam problems with their French colleagues, Coyne and Bellier and SOGEL. With regard to questions concerning the action taken by the Federal Power Board, Mr. Brown reported that there was a long meeting between the members of the Federal Power Board and Mr. Paton and his French colleagues, but that an agreement had been reached on the necessity of constructing the thrust block and on the manner in which it should be accomplished. The Consultants are first going to try to negotiate a contract with Impresit, the Italian contractor, to see if reasonable prices can be obtained. The Consultants are working on the basis that reasonable prices can be obtained as Impresit still has equipment at the site. If reasonable prices are not obtained, the work will be let by tenders.

cc: Mr. S. Aldewereld
Mr. A.D. Spottswood
Mr. M. Lejeune

OFFICE MEMORANDUM

TO: Files

DATE: July 26, 1961

FROM: G.A. Hathaway *GAH*

SUBJECT: Kariba Dam - South Abutment

On July 21, 1961, the following cable was transmitted to the firm of Sir Alexander Gibb & Partners in London in connection with the proposed additional work in the south abutment of Kariba Dam considered necessary to transfer the thrust of the dam to sound rock:

"THE BANK HAS CABLED TODAY JAMES WARD AS FOLLOWS QUOTE RE YOUR LETTER JULY 14 BANK'S TECHNICAL EXPERTS AND ADVISERS HAVE REVIEWED CONSULTANTS REPORT STOP WE CONCLUDE THAT BASIC PROPOSAL BY CONSULTANTS INVOLVING CONSTRUCTION OF THRUST BLOCK APPEARS TO BE ONLY ACCEPTABLE SOLUTION UNQUOTE WOULD YOU OR GUTHRIE BROWN TELEPHONE ME MONDAY JULY TWENTYFOURTH FOR CLARIFICATION OF CERTAIN ASPECTS PROPOSED DESIGN"

HATHAWAY

In compliance with the above cable, Mr. Guthrie Brown, Partner in the firm of Sir Alexander Gibb & Partners, called from London on the morning of July 24, with Mr. Aldewereld and myself participating in the conversation from the Washington end. At the beginning of the conversation I informed Mr. Brown that we were in agreement with the proposal for the construction of the thrust block for the right abutment of Kariba Dam but we had some questions to ask about the design and construction procedures. Following is a resume of the questions asked of Mr. Guthrie Brown by me and Mr. Brown's replies thereto:

Question No. 1 - With reference to the cutoff wall and shored trench upstream of the proposed thrust block on the right abutment, what are the possibilities of water from the reservoir going around the shored trench and cutoff wall and interfering with the underground excavation and placement of concrete for the thrust block, particularly that portion beneath the blocks of the existing dam where there is a head of about 100 feet of water above the underground excavation?

Answer - We feel that the cutoff wall and the shored trench together with the grouting in the right abutment is adequate and satisfactory. We do not believe that there will be any leakage through the right abutment to interfere with excavation or the placement of the underground concrete.

Question No. 2 - What are the reasons for utilising rockfill for part of the thrust block instead of solid concrete? It would appear that the rockfill and the concrete would each have a different modulus of elasticity and therefore would not transmit the thrust from the arch uniformly into the abutment.

Answer - The rockfill is much more economical than concrete and we feel that it is required only for additional weight to assist in holding down the thrust block. The rock is considered adequate for the purpose and note that the concrete of the thrust block is tied into the monoliths or blocks of the existing dam by prestressed cables and anchor bars. Also it is proposed to have a square net of grooves to be jack-hammered on the face of the dam. There are about 15,000 tons of rockfill, it is three or four times as cheap as the solid concrete would be and it is only weight that is required.

Question No. 3 - What is the reason for leaving the pillars of weathered quartzite underneath the concrete of the existing dam as well as the concrete of the thrust block to be constructed? I refer in particular to weathered quartzite pillars or columns labelled 6 on drawing no. 3301/3100 of your report. Would not these parallel pillars or columns of quartzite and solid concrete set up differential stresses beneath the concrete of the existing dam as well as the concrete of the thrust block to be constructed? Your seismic and jacking tests confirm that the modulus of deformation of the weathered quartzite varies greatly from the gneiss. It would also vary greatly from that of the new concrete to be placed beneath the dam. Your report states that the percentage of permanent deformation in the weathered quartzite amounts in one case to 73% of the total compression measured in the test. Would not these pillars of weathered quartzite set up high differential stresses?

Answer - We did not think so. This method of construction was done for economy. It simplifies the construction. To us the method seems to be quite satisfactory.

Question No. 4 - It is noted from drawings no. 3301/3099 and 3301/3101 that the thrust block begins around monolith 30 and extends to a point between monolith 36B and 38. Why do you not set the thrust block further back into the hill, say beginning at monolith 32 and extending to around monolith 40?

Answer - We are thinking of moving the thrust block further back into the hill and getting a little more width in line with what you are talking about.

Question No. 5 - It is noted on drawing no. 3301/3100 Section 1.1 that there is a large cross section of excavation beneath the dam which is to be filled with concrete. Is there not a possibility that you will have difficulty in supporting the blocks or monoliths of the existing dam?

Answer - We haven't had any trouble so far but the excavation and concreting will have to be done very carefully.

Question No. 6 - Why is the following statement made in the last paragraph on page 2 of Chapter VI, "Taking the extreme case where no extra work at all is done, the permissible maximum level would, as stated before, be no more than RL 1560 and the lake level would have to be lowered to RL 1510 by the end of this year"? It seems to me that a water level in the reservoir of RL 1560 would subject the admittedly weak abutment to almost the full arch thrust of the dam as the maximum retention level in the reservoir is at RL 1590. It would appear that a maximum water level of RL 1560 in the reservoir would be rather risky.

Answer - We can take care of a water level in the reservoir up to RL 1560 without risk. It has been checked carefully. However, we will look into that again.

Question No. 7 - The drawings show a vertical pegmatite dike beneath block 42 in the right abutment. Are you having any trouble with the pegmatite dikes in the right abutment as the history of this rock is generally unsatisfactory with respect to water tightness (in fact the geological Appendix A in the report on Kariba Dam page 4 states that the pegmatite is always considered to be somewhat pervious. A small spring was issuing from a pegmatite dike in the adit to the powerhouse. The abundant pegmatites well inside the hill in adits A₁ and A₂ explain that the rich injected biolite layers are weathered and soft.)

Answer - We are not worried about the pegmatite. We feel that the thrust block is the only solution.

There followed some general conversation regarding the importance of drainage and a specific reference to the report which stated that the consultants were making sure of the drainage. Mr. Brown was informed that we are satisfied that the thrust block is the best possible solution.

Mr. Aldewereld then requested Mr. Brown to send us a detailed report on the use of the rockfill as a part of the thrust block as well as a report on leaving the large pillars of weathered quartzite in the foundation of the thrust block. Mr. Brown was also requested to give us an extensive report on the procedures to be followed in excavating the weathered quartzite for the foundation of the thrust block and in particular beneath the monolith or blocks of the existing dam.

GAH/hd

cc: Mr. Aldewereld
Mr. Spottswood
Mr. Lejeune

KARIBA DAM

Conference Call from London - Messrs. Guthrie Brown, Gail Hathaway and S. Aldewereld - July 24, 1961

- Mr. Hathaway - How do you treat the abutment - digging trenches and filling with concrete?
- Mr. Brown - We feel that this is satisfactory.
- Mr. Hathaway - You build the thrust block but fill with rock - I would think that this would create elasticity problem.
- Mr. Brown - We think rock is adequate. Note concrete is tied in securely into the existing dam.
- Mr. Hathaway - You have two loads.
- Mr. Brown - About 15,000 tons of fill.
- Mr. Hathaway - Do you save more money by using rock fill?
- Mr. Brown - Yes - three or four times as cheap as we feel it is only weight that is required.
- Mr. Hathaway - Those pillars - labelled (six) -high differential stresses.
- Mr. Brown - We didn't think so, this was done for economy. It simplifies the construction.
- ??? Mr. Hathaway - Section 11 - large section which is weathered to quartz - seems highly differential.
- Mr. Brown - Seems to be quite satisfactory - will give that a check.
- (Mr. Hathaway - Why the block - why you didn't set it back further in the hill. Starts at 30 and ends between 26 - 28. Why didn't you put it back in the hill a little.
- ? Mr. Brown - We are thinking of reducing the width of it in line with what you are talking about.
- Mr. Hathaway - Quite a section - big excavation under the dam. Any trouble supporting those blocks.
- Mr. Brown - Haven't had any trouble so far, but it will have to be done very carefully.

Kariba Dam - Continued

- Mr. Hathaway - Chapter 7 - Page 2. Taking the extreme case, the maximum level of 1,560. It looks to me that this would put the full load into the abutment. Seems to me that it would be risky.
- Mr. Brown - We can carry it up to 1,560 without risk. Have checked carefully. We will look into that again, check again.
- Mr. Hathaway - Is the pegmatite satisfactory? - Always trouble with pegmatite.
- Mr. Brown - Not worried about the pegmatite. Fill that thrust block is only solution.
- Mr. Hathaway - (You mentioned something here about making sure of the drainage.)
- Mr. Hathaway - We are happy with the thrust block.
- S. Aldewereld- Further thought on rock fill and send us report about that.
- We owe it to them to give them our reaction.
- Please call us - give us an extensive report - then we can study.
- Mr. Hathaway - How you will support the weight of the dam on the bad quartz with those fillers.
- Mr. Brown - We will send you report.
- Mr. Aldewereld- Send us that report, will not comment until we see that report.

Transcribed by Mrs. Moore
July 24, 1961

TO: **PATON
GIBBOSORUM
LONDON**

DATE: **JULY 21, 1961**

CLASS OF
SERVICE: **NLTR**

MRT

Kaiba

COUNTRY: **ENGLAND**

TEXT:
Cable No.:

BANK HAS CABLED TODAY JAMES WARD AS FOLLOWS QUOTE RE YOUR LETTER
JULY FOURTEEN BANKS TECHNICAL EXPERTS AND ADVISORS HAVE REVIEWED
CONSULTANTS REPORT STOP WE CONCLUDE THAT BASIC PROPOSAL BY
CONSULTANTS INVOLVING CONSTRUCTION OF THRUST BLOCK APPEARS TO BE
ONLY ACCEPTABLE SOLUTION UNQUOTE WOULD YOU OR GUTHRIE BROWN TELEPHONE
ME MONDAY JULY TWENTY-FOURTH FOR CLARIFICATION OF CERTAIN ASPECTS
PROPOSED DESIGN

HATHAWAY

NOT TO BE TRANSMITTED

MESSAGE AUTHORIZED BY:

NAME ~~S. Hathaway~~ **S. Aldewereld**

DEPT. **Tech. Ops**

SIGNATURE 

(SIGNATURE OF INDIVIDUAL AUTHORIZED TO APPROVE)

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TO: MR. JAMES WARD
HYDRO
SALISBURY

DATE: JULY 21, 1961

CLASS OF
SERVICE: NLTR

COUNTRY: S. RHODESIA

RCA

TEXT:
Cable No.:

RE YOUR LETTER JULY FOURTEEN BANKS TECHNICAL EXPERTS AND ADVISORS
HAVE REVIEWED CONSULTANTS REPORT STOP WE CONCLUDE THAT BASIC
PROPOSAL BY CONSULTANTS INVOLVING CONSTRUCTION OF THRUST BLOCK
APPEARS TO BE ONLY ACCEPTABLE SOLUTION

LEJEUNE-INTBAFRAD

NOT TO BE TRANSMITTED

MESSAGE AUTHORIZED BY:

NAME M. Lejeune

DEPT. Europe, Africa & Australasia

SIGNATURE *M. Lejeune*

(SIGNATURE OF INDIVIDUAL AUTHORIZED TO APPROVE)

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DATE

21 Feb 1954

NAME

M. DeLoach

MESSAGE AUTHORIZED BY:

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CONFIDENTIAL
COMMUNICATIONS

MAR 21 5 41 PM 1954

TELEPHONE-TELETYPE

URGENT TO BE ONLY VISIBLE SOLUTION

URGENT BY COMPLETION IMMEDIATE CONSTRUCTION OF THESE BLOCK

HAVE REVEREND CONGRUOUS BEYOND STOP WE CONCLUDE THAT BASIC

BE LONG TERM FOR POLITICAL BANK TECHNICAL EXPERTS AND ADVISORS

CLASS: TOP SECRET

DATE: 21 FEB 54

FROM: SAC, WASH DC

TO: DIRECTOR, FBI

URGENT

URGENT

TO:

MR. TOLSON, WASH DC

CLASS: TOP SECRET

DATE: 21 FEB 54

DATE: 21 FEB 54

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COMMUNICATIONS SECTION
INTERNATIONAL FINANCE

(11-55)
FORM NO. 33

OUTGOING WIRE

TO: J. WARD
HYDRO
SALISBURY

DATE: JULY 19, 1961

CLASS OF
SERVICE: NIGHT LETTER

COUNTRY: SOUTHERN RHODESIA

RCA

TEXT:
Cable No.:

THANKS YOUR LETTER JULY FOURTEEN STOP EXPECT TO CABLE OUR COMMENTS EARLY
NEXT WEEK REGARDS

LEJEUNE
INTBAFRAD

JUL 19 2 23 PM '61
COMMUNICATIONS SECTION
INTERNATIONAL FINANCE CORPORATION

NOT TO BE TRANSMITTED

MESSAGE AUTHORIZED BY:

NAME Michael L. Lejeune

DEPT. Operations - EAA

SIGNATURE

Michael L. Lejeune
(SIGNATURE OF INDIVIDUAL AUTHORIZED TO APPROVE)

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INTERNATIONAL FINANCE CORPORATION

OUTGOING WIRE

RECORDS SECTION AND DEVELOPMENT
INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT
FORM NO. 72
7-1-60

DATE: JULY 19, 1961

TO: S. WARD
HYDRO
SALISBURY

CLASS OF SERVICE: NIGHT LETTER

COUNTRY: SOUTHERN RHODESIA

TEXT: 1
FORM NO. 72

THANKS YOUR LETTER JULY FOURTEEN. PLEASE EXPECT TO CABLE OUR COMMENTS EARLY

NEXT WEEK REGARDS

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CORRESPONDENCE

JUL 19 5 57 PM 1961

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INTERNATIONAL

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TO: J. WARD
RHODESIANS
LONDON

DATE: JULY 19, 1961

CLASS OF
SERVICE: NIGHT LETTER

MRT

COUNTRY: ENGLAND

TEXT:
Cable No.:

THANKS YOUR LETTER JULY FOURTEEN STOP EXPECT TO CABLE OUR COMMENTS EARLY
NEXT WEEK REGARDS

LEJEUNE
INTBAFRAD

JUL 19 2 23 PM 1961
COMMUNICATIONS
SECTION

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NAME Michael L. Lejeune

DEPT. Operations - FAA

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DATE: JULY 19, 1961

TO: J. WARD
PHOENIX
LONDON

CLASS OF SERVICE: NIGHT LETTER

COUNTRY: ENGLAND

TEXT: Cable No.

THANKS YOUR LETTER JULY FOURTEEN STOP PLEASE TO CABLE OUR COMMENTS EARLY

NEXT WEEK REGARDS

DISPATCHED

GENERAL FILES
CORRESPONDENCE

JUL 19 5 57 PM 1961

INTERNATIONAL
FINANCE

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MESSAGE AUTHORIZED BY:

NAME: Michael L. Lejeune

DEPT: Operations - FAA

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"RHODESIANS, LONDON"



Communications should be addressed to
THE SECRETARY

Reference

OFFICE OF
THE HIGH COMMISSIONER FOR RHODESIA & NYASALAND
Rhodesia House, Strand,
LONDON, W.C.2

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JAN 29 2019

WBG ARCHIVES

14th July, 1961.

Dear Mike,

Last year the Board informed the Bank that an extensive jetting and grouting programme would be necessary to deal with weaknesses in the rock on the South Bank abutment of the Kariba Dam. Last month a design team from the Consulting Civil Engineers re-examined the work and have now advised a change of plan the principle of which is that the horizontal thrust of the arch would act on a specially constructed gravity block. The additional cost is estimated at £1,900,000.

As you can imagine this came as a shock and I have flown to London to discuss the proposals in detail with the consultants. In these discussions I was joined by Duncan Anderson, Peterson and Bruce, the Board's Civil Engineer. Although we are extremely unhappy that these proposals should have come at the eleventh hour, I am afraid we have little alternative but to broadly accept the consultants advice.

I wanted to let you know as soon as possible and I am enclosing two copies of a report received from the consultants yesterday. I spoke to Cope over the telephone and he advised this course. Your engineers will want to look at this and the Board would be grateful of any observations they may care to make. I have told Gibb, Coyne and Sogie that they are to hold themselves available to answer any technical questions your people might put to them. From the Board's point of view it would be extremely valuable to have what is tantamount to a second opinion from you. We have told the consultants bluntly that the extent of the work needed should have been apparent before. We also feared that the Malpasset disaster might have influenced the consultants to advise costly precautions that were unnecessary. I have been assured, however, that this is not so and the conditions are quite different. In any event we could not contemplate any risks.

with TO D. / mm

I have not readily available the details of the financial implications, but it will mean ultimately drawings on Government Loan No.4. Cashwise drawings could be postponed for a while, although by 1973 when Loan No.4 is due for repayment the full impact would have to be borne by revenue. Nevertheless, if load growth is satisfactory, and the cost of Stage II does not exceed £40m., we should still be able to contribute half the capital for that work without fundamentally changing our tariffs. These comments are made without the book, but as soon as I return to Salisbury a detailed financial appreciation will be made and I shall let you know.

I regret having to spring this unfortunate news on you. It, of course, has not been to the Board yet but will on the 26th July,

after/...

Mr. Michael L. Lejeune,
Assistant Director, Department of Operations
(Europe, Africa & Australasia)
International Bank of Reconstruction & Development,
1818 H. Street, N.W.,
WASHINGTON, U.S.

AzK(wire) 21 July, 1961
A. K. ... 19 July, 1961

after which we shall have to make a public statement. If there is any advice you care to give me perhaps you would be kind enough to cable. I am informing C.D.C. and C.D.F. today.

Best wishes.

Yours sincerely

(J. Ward)

Jimmy Ward.

cc: Piccaagli 7/17

June 20, 1961

Dear Angus:

Thank you for your letter of June 12 relative to the grouting work at Kariba.

Our information on the drilling and grouting program at the South flank of the dam is very meager. We would be very grateful to learn if any particular difficulties are being encountered and whether the corrective measures promise to be effective. Please let me know the results of your meetings on June 21 and subsequently with Mr. Peterson.

I have no objection to your mentioning to Mr. Peterson that the Bank had sought the Consultants' views as to the progress and the extent of remedial measures.

Sincerely yours,

S. Aldewereld
Director of Technical Operations

Mr. T.A.L. Paton
Sir Alexander Gibb & Partners
Queen Anne's Lodge
Westminster
London, S.W. 1
England

cc: Mr. Spottswood

ALL COMMUNICATIONS TO BE ADDRESSED TO THE FIRM

SIR ALEXANDER GIBB & PARTNERS
CONSULTING ENGINEERS

T. A. L. PATON, C.M.G. B.Sc., M.INST.C.E., F.ASCE., M.I.STRUCT.E.
J. GUTHRIE BROWN, M.INST.C.E., M.I.STRUCT.E., M.I.E.AUST.
R. L. FITT, B.Sc., M.INST.C.E., M.I.STRUCT.E.
M. E. GIBB, M.A., M.INST.C.E., M.ASCE.
L. G. BOOEN, B.Sc., M.INST.C.E., M.I.STRUCT.E.
J. H. LANDER, O.B.E., M.A., M.INST.C.E.
A. D. S. MANGNALL.
K. F. SCOTT, M.C., M.INST.C.E., A.M.N.Z.I.E.
GIBB ASSOCIATES LTD.

CONSULTANTS:
F. W. MATTHEWS, M.INST.C.E., M.I.STRUCT.E., M.INST.C.E.I.
J. K. HUNTER, B.Sc., M.INST.C.E., M.I.MECH.E., M.I.E.E.
H. OLIVIER, C.M.G., M.Sc., Ph.D., M.INST.C.E., F.ASCE.

ASSOCIATES:
J. L. DERWAS, B.Sc., M.INST.C.E., M.I.CHEM.E.
H. G. KEEFE, M.INST.C.E., M.I.STRUCT.E.
R. G. T. LANE, B.Sc., M.INST.C.E., M.I.E.AUST.
H. L. FORD, F.R.I.B.A., A.M.T.P.I.

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WHITEHALL 0531
Telegrams: GIBBOSORUM LONDON

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JAN 29 2019

WBG ARCHIVES

PLEASE REFER TO

E/3301/874.

QUEEN ANNE'S LODGE,
WESTMINSTER,

LONDON, S. W. I.

12th June 1961.

CONFIDENTIAL.

Mr. S. Aldewereld,
International Bank for Reconstruction and Development,
Technical Operations Department,
1818 H Street, N.W.,
Washington 25, D.C.
U.S.A.

Dear Siem.

KARIBA

I owe you an apology. You asked Robert Fitt, and subsequently Henry Olivier, about the progress of the grouting etc. on the South Abutment to the Kariba Dam. I had delayed writing to you because a visit had been planned for this week to Kariba by our Chief Engineer on the scheme, accompanied by Chief Engineers from Coyne and Sogei. The Geologist, M. Dubertret, was also accompanying the engineers. They are at the moment on the site and are due to report back to a meeting, which Guthrie Brown and I are attending, in Paris on the 21st June.

The object of the visit is to review the present progress and to ascertain whether the work is proceeding satisfactorily or whether any modifications should be made. The work going on at the moment is drilling in the quartzite mass on the South Abutment, getting out of thin seams of clay and replacing with grout. In addition a mica seam is being excavated by hand and being replaced by concrete. We are also

proceeding-with/.....

002 June 20/61

Confidential.

Mr. S.Aldewereld.
12.6.61.

-2-

proceeding with certain inspection galleries. This is the work which has been in hand for over 12 months.

The programme has always envisaged the work continuing until the end of this year, which is satisfactory so far as the water level in the reservoir is concerned. In other words there is no need, in our view, to speed up the work to something beyond the economical rate.

I will be discussing the whole matter with G.R.Peterson, the General Manager and Chief Engineer of the Federal Power Board, when he comes to Europe for the Large Dams Conference at Rome and subsequently for a short visit to London, between the end of this month and the middle of July.

} If I may I will mention to him that you have raised this question of progress.

Henry Olivier and Dick Crow returned to London this morning and we had an interesting two-hour meeting with Mr.Ishaq. I will be letting your Department have a note of the points discussed shortly.

Yours sincerely

Angus Paton

Visit to Federal Power Board
and to the Kariba project.

Mr. A. D. Spottswood

April 27, 1961

Neil Bass and Charles MacLennan

Visits to the Federal Power Board and to the Kariba Project, Loan 145 RN - Rhodesia and Nyasaland

On the return trip from the recent mission in South Africa we each stopped at Salisbury (Neil Bass on March 30-31 and Charles MacLennan on April 14) to visit officials of the Federal Power Board and the Kariba project.

2. Construction work and clean-up are nearing completion. Remaining work involves completion of the installation of Unit No. 5 (scheduled about September 1, 1961), installation of Unit No. 6 (scheduled for completion about March 1, 1962) and completion of the grouting program in the right (south) abutment. The grouting work is in its final phases.

3. On April 12 the recently completed Sherwood-Bulawayo transmission line was placed into service and the Bulawayo municipal load was transferred from the thermal plant to the Federal Power Board system. With the additional load, the system maximum demand, registered in the evening of April 13, was 330 Mw. This, of course, is expected to increase with the advance of the winter season.

4. At the present time about one-third of Kariba output is being transmitted north over the Kitwe line. Nevertheless, due to the length of line, a considerable component of charging current is being supplied by the generators at Kariba power station. No operating difficulties are experienced, however, except when the Kariba-Kitwe line opens automatically (which has happened during thunder storms). Nevertheless, in such events service interruptions have been minimized by the close cooperation of the operating personnel of the interconnected Congo electric system.

Water Situation

5. The reservoir is filling about according to the rule curve for the three years experienced to date. The first and second rainy seasons were slightly below normal; this year's season was normal. Mr. Peterson, the General Manager, stated that they were sure to have sufficient water by September 1 of this year for operation of the fifth unit.

Load Growth

6. Load on the system is now increasing at a rate of 6% per annum as against the long-range forecasts of 9% per annum. Thus far this has not affected the total load growth which is within 1% of forecasts. Decrease in the forecast rate of growth is attributed to the political

April 27, 1961

situation. Many enterprises are holding up their development or expansion plans. Examples are a proposed nitrate fertilizer plant, an aluminum fabricating industry (40 M estimated demand) and the Aminol oil refinery (a £ 16 million development).

Income

7. The increased tariffs went into effect January 1960. The new tariff is mainly applied to new load and to increased loads, the blocks of power being continued at the old rate. This, according to Mr. Peterson, has proven to be a very acceptable policy. The Board made a profit during the first six months of £ 300,000 and expects that, similarly in fiscal year 1961, the profit will amount to £ 500,000.

Reservoir Problem

8. An aquatic growth, salvinia suriculata, is prolific in the reservoir and is receiving much publicity. It forms a mat on the reservoir surface, grows and spreads rapidly. It covers considerable of the surface area, principally in the lagoons, in the middle third (lengthwise) of the reservoir. The nearest point to the dam, at which the growth occurs is about 50 miles. In the upper reaches of the reservoir it does not appear at present to thrive.

9. Time Magazine (African Edition) of March 31, 1961 quoted a Professor Boris I. Balinski of Johannesburg as saying the growth would threaten the use of the reservoir for power and that the Power Board had spent, futilely, about \$3 million in combating the growth. Mr. Peterson said the figure was an error, that thus far about \$30,000 had been spent in research as to the best method of eradication to be adopted. Their effort is not to use weed-killer that would not also kill fisheries resources. The Board feels that the growth, even if it spreads to the lower reaches of the reservoir, will not be a threat to power production. The growth extends only a few inches below the water surface and could be retained just above the dam by booms. The Board intends to carry on vigorous research as to the best method of eradication. The Board has thus far declined to accept the proffered services of Professor Balinski to conduct this research program.

Timing for Stage II

10. The Board is undecided, at this time, as to the date when Stage II would be required, and consequently as to when work for its construction should begin. The earlier decision of the Board was that the first set of Stage II would be required to meet the peak estimated for the winter of 1967 (i.e. June-July 1967) and that, to be sure of achieving this schedule, the main civil contract for Stage II should be placed by January 1962, i.e. 5-1/2 years earlier.

To: Mr. A. D. Spottswood - 3 -

April 27, 1961

11. Load growth, however, may not develop as anticipated. Furthermore Stage I will have a continuous overload capacity of 75 to 100 MW. The Board decided on the basis of these considerations and on annual load forecasts considered in January 1961 to defer the schedule. The Board now expects to make a decision after experiencing this season's (July 1961) peak load. Thus, according to Mr. Peterson, the Board may be faced with this "difficult decision" in late 1961. (A copy of the Board's Annual Plant and Load Survey for the Seven-Year Period July 1960 - June 1967 was supplied the Bank and is attached to the original copy of this memo.)

Attachment

cc: Messrs. Aldewereld/Squire
Cope/Lejeune
Marshall/Butcher
Bass
MacLennan
Operational Files ✓

NB:CMacL:ls

AIRMAIL

March 6, 1961

Mr. James Ward
Chairman
Federal Power Board
P.O. Box 630
Salisbury, Southern Rhodesia

Re: Kariba Project, Loan 145 RN

Dear Jimmy:

It gives me great pleasure to have an opportunity to write you and offer my congratulations for your appointment as Chairman of the Power Board. The occasion for writing is to inform you that one of the senior members of our engineering staff, Mr. Neil Bass, will be completing a mission in the Union of South Africa about the end of March and, on returning from Johannesburg, would like to stop over in Salisbury for a brief visit to the Kariba project. I hope this would be convenient to you.

Mr. Bass will be departing from Washington March 10 and arriving in Johannesburg on March 15. He can be communicated with in care of the office of General Manager, of the Electric Supply Commission of South Africa (ESCOM), at Escom Centre, Smit Street, Johannesburg. Mr. Bass expects to contact you directly from South Africa as to the date of his arrival in Salisbury.

I hope that I shall have the pleasure of seeing you again in the not too distant future. Both Gabriella and I would like to be remembered to Mrs. Ward.

Sincerely yours,

M. Piccagli
Acting Chief, Public Utilities Division
Department of Technical Operations

cc: Mr. Bass
Mr. Fajans, Area Dept.
Division File

NB:ls

See last paragraph.

Messrs. Neil Bass, Charles MacLennan and
Yves Novani
M. Piccagli

March 2, 1961

Terms of Reference - South Africa: Mission to Appraise ESCOM Power
Expansion Project

On or about March 10 you will depart for Johannesburg, South Africa to carry out an appraisal of a power program submitted for Bank financing by the Electricity Supply Commission of South Africa (ESCOM). En route, Messrs. Bass and MacLennan should discuss ESCOM's Program with Hertz and McLellan, Consultants, in London.

In your appraisal you should be guided by this Division's "Summary of Information Needed for Power Project Appraisals (as amended), December 15, 1959". Special attention should be given to the following:

(1) Identity of the Project on which loan is to be based. As in the case of previous loans to ESCOM, the Project will be an appropriate portion of the ESCOM's proposed expansion program permitting, to the extent compatible with Bank procedures, early disbursements.

(2) ESCOM's financial policies and practices. The Bank is aware that ESCOM is required by law to operate neither at a profit nor at a loss and maintains unusual accounting practices (e.g. depreciation, in the ordinary sense, is not charged). You should nevertheless carry out your financial appraisal along the usual lines and, in particular, ascertain the adequacy of ESCOM's present financial policies and practices in the light of its substantial financial requirements.

Messrs. MacLennan and Novani will have responsibility for preparation of the appraisal report. Mr. Bass will provide general guidance during the mission's work. The assignment should be completed within about 30 days. Members of the mission need not plan to return to Washington simultaneously inasmuch as Mr. Novani will have an overlapping assignment in an appraisal of a transportation project and furthermore Mr. Bass might be required to leave earlier than Mr. MacLennan because of other work assignments.

On your return you will submit a preliminary summary of your appraisal.

While in South Africa the mission will also carry out an end-use inspection of projects covered in the two previous loans to ESCOM, 41 SA and 73 SA and submit separate reports on each of these projects.

On the return trip Mr. Bass will pay a brief visit to the Kariba Project, Loan 145 RN.

Cleared with & cc: Mr. Collier (2); cc: Messrs. Aldewald/Squire;
Mr. Spottswood/Div. File (3); Miss Van Gasse (2);
Operational Files (6) ✓

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: February 23, 1961

TO: H. Campbell Ballingall, Esq. Deputy Secretary to the Federal Treasury,
P.O. Box 8137, Causeway, Salisbury, Federation of Rhodesia
and Nyasaland.

FROM: Joseph Fajans

FILED UNDER: Federation of Rhodesia and Nyasaland - Loan 197RN.

SUMMARY: Requesting copies of Amendments to the Federal Audit and Exchequer Act.

New Chairman •

From: Sir Duncan Anderson, K.B.E., T.D.

KW-7145

CHAIRMAN'S OFFICE
TELEPHONE 25958

FEDERAL POWER BOARD,
P. O. BOX 630,
SALISBURY,
S. RHODESIA.

22/4/1 (8)

22nd February, 1961.

Dear Mike,

The fourth turbo generator at Kariba is now being commissioned and my task here is drawing to a close.

In my letter, reference No. 3/55, of 17th August, 1960, I told you of the appointment of Mr. G.R. Peterson as General Manager, and that I should be leaving the Board early in 1961. I shall, in fact, be leaving Salisbury on 4th April.

To take my place as Chairman the Minister of Power has appointed Mr. James Ward who is well known to you. He was, as you will remember, until some time in 1959, Secretary for Power in the Federal Government service. He will be a part-time chairman and will not be, as I have been, Chief Executive. The executive functions will be carried out by the General Manager.

Mr. Ward has already become a member of the Board and will become Chairman on 5th April. He has had long service with the Government, formerly with the Southern Rhodesia and latterly with the Federal Government. He will shortly retire from the post of Secretary for Economic Affairs. It is almost unnecessary for me to add that he has a full knowledge of the Kariba Project and of Federal affairs generally.

Please convey my warm regards to your colleagues at the Bank.

*With every good wish,
Yours as usual,*

Mr. Michael L. Lejeune,
Assistant Director of Operations,
Europe, Africa and Australasia,
International Bank for Reconstruction & Development,
1818, H. Street, N.W.,
WASHINGTON, 25, D.C.,
U.S.A.

D. Anderson

N.A.

February 7, 1961

James Ward, Esq.
Secretary for Economic Affairs
P.O. Box 8201, Causeway
Salisbury
Federation of Rhodesia
and Nyasaland

Dear Jimmy:


We were very pleased to learn that you are to succeed
Duncan Anderson as Chairman of the Federal Power Board. Con-
gratulations.

We look forward to the prospect of seeing you from time
to time and are glad to know that we shall have an old friend
in such an important post.

Very best wishes,

Yours sincerely,

Michael L. Lejeune
Assistant Director of Operations
Europe, Africa and Australasia

 JFajans:MLLejeune:re

cc.: Messrs. Spottswood/Piccagli
Bateson

RN-7145

January 16, 1961

The Secretary
Federal Power Board
P.O. Box 630
Salisbury
Southern Rhodesia

Dear Sir:

This is to acknowledge receipt of your letter of December 8, No. P9(227) enclosing copy of contract No. P9 for Auxiliary Transformers.

This contract will be forwarded to our Treasurer's Department for its files.

Sincerely yours,

Mario Piccagli
Asst. Chief, Public Utilities Division
Department of Technical Operations

MPiccagli:abs
cc: Mr. Fajans
Mr. Veryheyen (with contracts)

Mr. Veryheyen

November 21, 1960

The Secretary
Federal Power Board
P.O. Box 630
Salisbury
Southern Rhodesia

Dear Sir:

This is to acknowledge receipt of Contracts S.4(239) and S.6(208), for which we thank you. We are passing these contracts to our Treasurer's Department for their Contract file.

Sincerely yours,

Mario Piccagli
Asst. Chief, Public Utilities Division
Department of Technical Operations

MPiccagli:abs
cc: Messrs. Fajans
Verheyen, with Contracts

OFFICE MEMORANDUM

TO: Files

DATE: October 13, 1960

FROM: S. R. Cope

SUBJECT: Federation of Rhodesia and Nyasaland - Kariba

1. At lunch today Mr. Hoar mentioned that he had a possibility of selling part of the CDFC's loan to the Federal Power Board to an insurance company (or companies). One obstacle, however, was the fact that the insurance companies did not like semi-annual amortization, but preferred a loan to be repayable in full at the end of a specified term: this would make it necessary to modify their present agreement with the Federal Power Board.

2. I said that this was an interesting development. If such a transaction ever appeared feasible, we would be prepared to consider whether it would not help if, instead of suggesting to the Federal Power Board a one-way change in the CDFC agreement, there would be at the same time a similar change in a reverse direction in the maturities of a corresponding part of the Bank's loan. Thus, taking the two loans together, there would be no change in the amortization pattern. A sale by CDFC would be facilitated and the Bank would get its money back quicker. Mr. Hoar thought that this was a useful suggestion and said he would raise the matter with us if the occasion arose.

SR Cope :mmr

cc: Messrs. J. Burke Knapp
R. W. Cavanaugh
A. Broches
M. L. Lejeune



INCOMING MAIL ROUTING SLIP			Date OCT 26 1960	
Mr. Black	1024	Mr. Perry	513	
Mr. Broches	1113	Personnel Div.	207	
Mr. Cargill	614	Mr. Poore	801	
Mr. Clark	1113	Mr. Prasad	716	
Mr. Cops	813	Mr. Ramm	A313	
Mr. Demuth	506	Mr. Reamy	A318	
Mr. Doucet	1017	Research Files	822	
E.D.I.		Mr. Rist	716	
Goor	705	Mr. Rosen	614	
Mr. Hauenstein	101	Mr. Rucinski	600	
Mr. Howell	801	Mr. Schmidt	513	
Mr. Iliff	1003	Mr. Stevenson	600	
Mr. Knapp	1024	Technical Op.	309	
Mr. Lejeune	813	Translation	804	
Mr. Mendels	1017	Treasurers	700	
Mr. Nurick	1121	Mr. Worthington	A316	
Office of Info.	228			
Office Services	111			

Remarks:

Central Files

RN-145

TELEPHONE: MAYFAIR 8484

CABLES: VELOP, LONDON

CODE: BENTLEY'S SECOND

COLONIAL DEVELOPMENT CORPORATION

1627/002

33 HILL STREET
LONDON W1

24th October, 1960

Mr S.R.Cope,
Director of Operations, Europe, Africa,
and Australasia,
International Bank for Reconstruction &
Development,
1818 H Street NW,
WASHINGTON 25 DC.

Handwritten signature: T. Faganis

Dear Mr Cope,

Kariba Hydro-electric project

Thank you for your letter of October 3rd enclosing a letter to the Federal Treasury referring to the British South African Company's loan to the Federal Government in relation to Kariba.

Your letter arrived whilst I was on a visit to East Africa and a reply was held over. This letter is to let you know that CDC has informed the Government that it has no objection to the Federal Minister of Finance signing the proposed letter of consent.

Yours sincerely,

Handwritten signature: H.A. Cochran

H.A.COCHRAN
Controller of Operations.

1820 OCT

BE

RECEIVED
BANK MAIL ROOM

1960 OCT 26 AM 9:44

COMMISSION OF CONSERVATION
111, COLUMBIA

[Handwritten signature]

TO: DIRECTOR

THE PROPOSED PROJECT OF CONSERVATION
AND DEVELOPMENT OF THE WATERSHED OF THE GREAT
LAKES BASIN AND THE ADJACENT WATERSHEDS OF THE
ST. LAWRENCE RIVER BASIN AND THE GREAT LAKES BASIN
IS BEING CONSIDERED BY THE COMMISSION OF CONSERVATION
AND DEVELOPMENT OF THE WATERSHED OF THE GREAT
LAKES BASIN AND THE ADJACENT WATERSHEDS OF THE
ST. LAWRENCE RIVER BASIN AND THE GREAT LAKES BASIN

AND DEVELOPMENT OF THE WATERSHED OF THE GREAT
LAKES BASIN AND THE ADJACENT WATERSHEDS OF THE
ST. LAWRENCE RIVER BASIN AND THE GREAT LAKES BASIN
IS BEING CONSIDERED BY THE COMMISSION OF CONSERVATION
AND DEVELOPMENT OF THE WATERSHED OF THE GREAT
LAKES BASIN AND THE ADJACENT WATERSHEDS OF THE
ST. LAWRENCE RIVER BASIN AND THE GREAT LAKES BASIN

FOR THE DIRECTOR

DEPT. OF THE ENVIRONMENT

MINISTER OF THE ENVIRONMENT
111, COLUMBIA ST.
OTTAWA, ONTARIO
K1P 6K6
TEL: 961-1111
TELETYPE: 961-1111

1960 OCT 26 AM 9:44 GONDON MI 111 COLUMBIA ST.

COMMISSION OF CONSERVATION AND DEVELOPMENT OF THE WATERSHED OF THE GREAT LAKES BASIN AND THE ADJACENT WATERSHEDS OF THE ST. LAWRENCE RIVER BASIN AND THE GREAT LAKES BASIN



~~1. Mr. Cope~~
2. Files P-103 RN-614

COMMONWEALTH DEVELOPMENT FINANCE
COMPANY LIMITED

1 UNION COURT
OLD BROAD STREET
LONDON E.C.2

CABLES: CODEFICO LONDON

TELEPHONE: AVENUE 9571

21st October, 1960.

S.R. Cope, Esq.,
Director of Operations for Europe,
Africa and Australasia,
International Bank for Reconstruction and Development,
1818 'H' Street, N.W.,
Washington, 25. D.C.

Dear Mr. Cope,

Kariba Hydro-Electric Project -
Loan by the British South Africa Company

Thank you for your letter of 3rd October enclosing a copy of your reply to the Federal Treasury of Rhodesia and Nyasaland. Since I received your letter the Federal Treasury have sent us the full text of the "letter of consent" and supporting documents, and I enclose a copy of our reply.

Yours sincerely,

A.W. Peek,
Secretary.

ENC

RECEIVED
BANK MAIL ROOM
1960 OCT 24 AM 11:41

Faint, illegible text at the top of the page, possibly a header or address block.

Second section of faint, illegible text, possibly a body paragraph.

Third section of faint, illegible text, possibly a signature or closing.

Bottom section of faint, illegible text, possibly a footer or return address.

Your ref: B/187/14

21st October 1960

The Secretary,
Federal Treasury,
P.O.Box 8137,
Causeway,
Salisbury,
Southern Rhodesia.

Dear Sir,

Kariba Hydro-electric Project -
Loan by British South Africa Company

Thank you for your letter of 12th October 1960, enclosing, with related documents, a draft "letter of consent" approving the assignment to the British South Africa Company Investments Ltd. of the rights and liabilities of the British South Africa Company Ltd. under its agreement with the Federal Government covering a loan to the latter of £4 million.

I note that you have referred this matter to the Federal Power Board and to the International Bank for Reconstruction and Development, and that neither has raised an objection to the assignment. Provided, therefore, that you obtain a similar indication from the Colonial Development Corporation, I am pleased to inform you that Commonwealth Development Finance Company Limited has no objection to the Minister of Finance signing the "letter of consent", in accordance with your enclosed draft.

Enclosed with your letter is a copy of a letter from the Acting Secretary to the Federal Treasury to Mr.E.S.Newson, Assistant General Manager of the British South Africa Company, bearing the date August 1956. On the photo-copy the day of the month and the signature do not appear. Would you please confirm our understanding that this is the third letter referred to in the draft "letter of consent", and that it was signed under date 22nd August 1956.

Yours faithfully,

A.W.Peek - Secretary.

Copies to: International Bank for Reconstruction and Development, Colonial Development Corp

specimen signature
G. R. PETERSEN.

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. Box 630
25958
TELEPHONES: 20556
29231/2/3
TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

142/3

5th October, 1960

The Treasurer,
International Bank for Reconstruction
and Development,
1818, H Street, N.W.,
WASHINGTON, 25, D.C.

Dear Sir,

LOAN IB 145 EN.
AUTHORISED SIGNATORIES.

I refer to my letter, No. 143/3 of 7th September, 1960, in which I stated that a specimen signature of Mr. G.R. Peterson would be sent to you. A specimen of Mr. Peterson's signature is shown on the certificate attached.
...

If you require any further evidence of authority or authentication, would you please let me know?

Yours faithfully,



SECRETARY

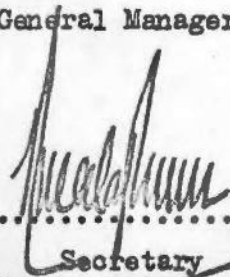
FG/ZS

J. R. Peterson

CERTIFICATE

I, RONALD JOHN HARVEY, hereby certify that
the foregoing is the true signature of
Mr. George Rainy Peterson, General Manager of the
Federal Power Board.

Signed


Secretary
to the Federal Power Board

5th day of October, 1960.

Mr. M. Verheyen

October 5, 1960

R. G. Bateson

Loan No. 145 RN - Withdrawal Authorization.

Under cover of a letter dated September 7, 1960, from the Secretary of the Federal Power Board, we have received a certified copy of a resolution of the Federal Power Board passed on September 6, 1960, which authorizes, as from October 1, 1960, Mr. G. R. Peterson, General Manager, to sign withdrawal applications under the above Loan.

The resolution is in order and is sufficient authority for Mr. Peterson to sign withdrawal applications.

I have forwarded the originals of these documents to Official Files for photostating. You should be receiving your copies in due course.

RGB:vk

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

of - Folas

P.O. Box 630

25958

TELEPHONES: 20556
29231/2/3

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

39/8/5.(12)

RELIANCE HOUSE,

MOFFAT STREET,
SALISBURY,
S. RHODESIA.

3rd October, 1960.

N/A

Department of Operations, Europe,
Africa and Australasia,
International Bank for Reconstruction,
and Development,
1818 H Street N.W.
WASHINGTON 25., D.C.
U.S.A.

[Signature]
Mr Jayans

*I am holding
one to read.*

Dear Sirs,

I enclose two copies of the Federal Power Board's
Fifth Annual Report and Accounts for the year ended 30th
June, 1960.

Yours faithfully,

[Signature]
SECRETARY.

Document - Kaniba #49B

RECEIVED
BANK MAIL ROOM

1960 OCT 10 AM 10:36

CR&S

BONOI BOND

ATLANTA SCHOOL

1960

1960

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1960

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1960

1960

1960

1960

FEDERAL BOMB BOARD

October 3, 1960

A. W. Peek, Esq.
Secretary
Commonwealth Development Finance
Company, Ltd.
1 Union Court
Old Broad Street
London E.C.2

Dear Mr. Peek:

I take pleasure in enclosing a copy of a letter
which I addressed today to Mr. J. K. Pinches at the Federal
Treasury in Salisbury.

Oct-3/60

Yours sincerely,



S. R. Cope
Director of Operations
Europe, Africa and Australasia

Encl.



JFajans:re

cc.: Mr. Bateson

October 3, 1960

Mr. H. A. Cochran
Controller of Operations
Colonial Development Corporation
33 Hill Street
London W1
England

Dear Mr. Cochran:

Oct-3/60

I take pleasure in enclosing a copy of a letter
which I addressed today to Mr. J. K. Pinches at the Federal
Treasury in Salisbury.

Yours sincerely,



S. R. Cope
Director of Operations
Europe, Africa and Australasia

Encl.

JF

JFajans:re

cc.: Mr. Bateson

October 3, 1960

J. K. Pinches, Esq.
Federal Treasury
P.O. Box 8137
Causeway
Salisbury
Federation of Rhodesia
and Nyasaland

Dear Mr. Pinches:

Kariba Hydro-Electric Project: Loan by
the British South Africa Company

Thank you for your letter of September 19, 1960, ref. B/187/14, referring to the request by the British South Africa Company that the Federal Government consent to the assignment by that Company to the British South Africa Company Investments Limited of the rights and liabilities of the British South Africa Company under the agreement between the latter and the Federal Government relating to a loan of £4,000,000 to the Federal Government for the Kariba project.

I have noted your statement that the Federal Power Board have indicated that they have no objection to the assignment. We assume that, before signing the "letter of consent", you will obtain similar indications of no objection from the Colonial Development Corporation and the Commonwealth Development Finance Company.

Based upon the foregoing, I am pleased to inform you that the Bank has no objection to the Minister of Finance signing the proposed "letter of consent".

I am sending copies of this letter to the Colonial Development Corporation and the Commonwealth Development Finance Company.

Yours sincerely,



S. R. Cope
Director of Operations
Europe, Africa and Australasia

cc: Messrs. Lejeune/Fajans
Piccagli
Verheyen
Bateson

RGBateson/fgs
cc: CDC & CDFC

RN- 145 ✓

Telegrams: "FEDFINANCE"
Telephones: 25098-20387

Reference:

B/187/14

Communications should be
addressed to the SECRETARY

RHODESIA NYASALAND



JKP/ARN

FEDERAL TREASURY,
P.O. BOX 8137, CAUSEWAY,
SALISBURY,
RHODESIA AND NYASALAND.

19th September, 1960.

The International Bank for Reconstruction and
Development,
1818 H Street, N.W.,
Washington, 25 D.C.
U.S.A.

Gentlemen,

KARIBA HYDRO-ELECTRICT PROJECT : LOAN BY THE BRITISH
SOUTH AFRICA COMPANY.

As you know the British South Africa Company agreed to
make a loan of £4 million to the Federal Government which in its turn
undertook to re-lend the money to the Federal Power Board to help
finance the Kariba Hydro-Electric Project.

Since this agreement, the British South Africa Company
entered into an agreement with the British South Africa Company Investments
Limited and sold to the Investment Company inter alia all the Company's
rights under the agreement between the Company and the Federal Government.
The Company have now asked whether the Federal Government is agreeable
to the Investment Company taking the place of the Company for all purposes
of the Loan Agreement, and if so, to authorise the Minister of Finance to
sign a letter of consent agreeing to the assignment to the British
South Africa Company Investments Limited of the rights and liabilities of
the British South Africa Company. In this connection I enclose for
your information, a copy of the "letter of consent" together with a copy
of the Agreement between the British South Africa Company and the British
South Africa Company Investments Limited and the proposed Executive
Council Minute empowering the Minister of Finance to sign the letter of
consent. I also enclose for your easy reference copies of the letters
referred to in the letter of consent, and Executive Council Minute No.
102 of 1956 referred to in the draft Executive Council Minute.

This matter has already been referred to the Federal
Power Board who have indicated that they have no objection to the
transfer.

/2.....

acc. Oct-3/60.

RECEIVED
BANK MAIL ROOM
1960 SEP 23 PM 4:36

The purpose of this letter is, therefore, to enquire whether your Bank as a lender to the Federal Power Board, would have any objection to the Minister of Finance signing the "letter of consent".

Yours faithfully,


J. K. PINCHES.

for: ACTING SECRETARY TO THE FEDERAL TREASURY.

ENCL:

MEMORANDUM

ACCEPTANCE OF OFFER OF A LOAN BY THE BRITISH SOUTH AFRICA COMPANY FOR THE FINANCING OF THE KANERA PROJECT.

- (2) In terms of Article 36 of the Constitution the executive power of the Federation is vested in the Governor-General.
- (2) The acceptance of the offer of a loan of £4 million by the British South Africa Company accordingly requires the approval of the Governor-General.
- (3) In addition the authority of the Governor-General is required for this borrowing in terms of the General Loans Act 1954.
- (4) The Executive Council minute is in a form approved by the Attorney General.

MINISTER OF FINANCE

MINISTERS

COUNCIL

102/56

LOAN OF £2,000,000 BY THE BRITISH SOUTH AFRICA COMPANY
TO THE FEDERAL GOVERNMENT TO ASSIST IN THE FINANCING
OF THE KARIBA PROJECT.

MINISTERS have the honour to recommend that His Excellency
the Governor-General may be pleased -

- (a) In terms of article 36 of the Constitution, to
accept the offer made by the British South Africa
Company in the attached letter to lend to the Federal
Government the sum of £2,000,000 to assist in the
financing of the Kariba project on the terms and
conditions contained therein, and to authorize the
Federal Minister of Finance to convey to the British
South Africa Company the acceptance of that offer and,
further, to give an undertaking to the said Company
that, if the contemplated loan from the International
Bank for Reconstruction and Development is not obtained,
the rate of interest and the commitment commission
charge payable in respect of the loan by the said
Company to the Federal Government shall be the same
as those which the Federal Government agrees to pay
to the Standard Bank of South Africa Ltd. and to
Barclays Bank D.C.O. in respect of loans to be made
by these banks to assist in the financing of the
Kariba project; and

(b) subject to ...

(a) ... of the ...
... 1954, to authorize the ...
... is that offer to be ...
... with the terms and conditions thereof as and
... when the money so offered is received by the
Federal Treasury.

Copy of letter from The British South Africa Company, dated
5th April, 1956; Reference No. 141/1.

Board of Directors

G. Selys-Hutchinson (President)
Col. Sir T. Ellis Robins, KBE.,
DSC., ED. (Vice-President)
Sir Ernest Oppenheimer
L.F.A. d'Erlanger
Robert Annan
M.P. Barry
P.V. Murray-Evans
A. Oscar Wilson
J. Smery, M.P.

THE BRITISH SOUTH AFRICA COMPANY
A Company with Limited Liability
Incorporated by Royal Charter in
England

RESIDENT DIRECTOR'S OFFICE

CHARTER HOUSE,

Salisbury,
S. Rhodesia.

6th April, 1956.

All Communications
to be addressed to
The Resident Director

P.O. Box 364,

Telephone No. 25731

Telegrams,
"Charter, Salisbury".

YHR/YPW
Reference No. 141/1

The Federal Minister of Finance,
P.O. Box 8137,
Geneva.

Sir,

With reference to our loan of \$4,000,000 to the Federal Government towards the financing of the Kariba project, I have pleasure to confirm that The British South Africa Company (hereinafter referred to as the Company) undertakes to lead to the Federal Government (hereinafter referred to as the Government) the sum of \$4,000,000 for the purposes of financing the Kariba hydro-electric project (hereinafter referred to as the project), subject to the following terms and conditions:-

1. subject to clause 9 hereof, the said loan of \$4,000,000 shall be paid to the Government within the period from the 1st July, 1956, to the 30th June, 1961, inclusive, in such instalments as shall be specified in an estimate to be furnished by the Government to the Company.
2. The aggregate amount of the loan instalments shall not exceed \$1,500,000 in any one calendar year.
3. The loan instalments shall be paid to the Secretary to the Federal Treasury at Salisbury at his request, subject to thirty days' notice in writing.
4. The Government shall pay interest on the amount of the said loan from time to time paid at the same rate as that which will be fixed for the loan which is at present being sought from the International Bank for Reconstruction and Development for the purposes of the project.

the said interest shall continue to be paid in the form of twenty instalments of the loan on the 31st of July of each year, and the 31st of December in each year.

6. In addition to the said interest, the Government shall pay to the Company by way of deduction from every instalment of the loan or otherwise a commitment commission charge of three per cent. per cent. of the amount of any such instalment.
7. The Government shall effect the redemption of the loan in twenty redemption instalments, the first of which shall be paid on the fifth anniversary of the payment of the last instalment of the loan in terms of clause 3 hereof and the subsequent redemption instalments shall be paid on each successive anniversary of that payment. The redemption instalments shall be payable to the Company at Salisbury.
8. The redemption instalments shall be as follows -
 - the first five redemption instalments shall be of £75,000 each;
 - the second five redemption instalments shall be of £125,000 each;
 - the third five redemption instalments shall be of £250,000 each; and
 - the fourth five redemption instalments shall be of £350,000 each.
9. In the event of the Government having decided, prior to the first notice of payment being made in terms of clause 3 hereof, not to proceed with the project, this agreement shall be deemed to be rescinded ab initio and no payment shall be due from, or any liability attach to, the Company or Government in respect thereof.
A letter from the Secretary to the Federal Treasury to the Company stating that the Government has decided not to proceed with the project shall be sufficient evidence of what is thus stated.
10. Any amount payable by the Government or by the Company under this agreement shall be paid in the currency of the Federation.

I shall be grateful if you will endorse your acceptance of the above on the attached copy hereof, which shall then constitute the memorandum of a binding contract between the Government and the Company.

I have the honour to be,

Sir,

Your obedient servant,

(Sgd.) J. E. Robins

ASSISTANT DIRECTOR

~~CONFIDENTIAL~~
1960

DRAFT LETTER FROM: The British South Africa Company
TO: The British South Africa Company
Investments Limited.

Dear Sirs,

In pursuance of Clause 7 of the Agreement made the 20th day of March, 1958, between The British South Africa Company (hereinafter called "the Company") and The British South Africa Company Investments Limited (hereinafter called "the Investment Company") the Company with the consent of the Government of the Federation of Rhodesia and Nyasaland (hereinafter called "the Federal Government") (which consent is evidenced by the signature of the Federal Minister of Finance to the form of consent appearing at the foot of this letter) hereby assigns to the Investment Company all the Company's rights and obligations under the Agreement between the Company and the Federal Government contained in three letters, short particulars of which are set out below, relating to the loan of £4,000,000 (in the currency of the Federation of Rhodesia and Nyasaland) to be made by the Company to the Federal Government for the purposes of financing the Kariba Hydro-electric project.

We should be grateful if you would indicate your acceptance of the assignment contained in this letter by dating and signing the form of acceptance appearing at the foot of the enclosed copy of this letter and returning the copy to us.

	<u>Date of Letter:</u>	<u>From:</u>	<u>To:</u>
(1)	6th April, 1956	The Company's Resident Director	The Federal Minister of Finance

(with the acceptance of the Federal Government endorsed thereon and dated 19th April, 1956).

(11)	13th July, 1956	The Secretary to the Federal Treasury	The Company's Resident Director
------	-----------------	---------------------------------------	---------------------------------

<u>Date of Letter</u>	<u>From</u>	<u>To</u>
(111) 22nd August, 1956	The Acting Secretary of the Federal Treasury	The Company's Assistant General Manager.

Yours faithfully,

The consent of the Governor-General has been given to the assignment contained in this letter and on his authority I hereby convey this consent to you.

Federal Minister of Finance.

1960.

The British South Africa Company Investments Limited hereby accepts the assignment contained in this letter.

For and on behalf of The British
South Africa Company Investments
Limited.

1960.

(c) the goodwill of Chartered as an underwriter of issues of investments or other the goodwill of Chartered which appertains to dealing in investments with the right to use the name "The British South Africa Company" as part of the name of the Investment Company

2. THE Investment Company shall take over as at the close of business on the Twentieth day of March One thousand nine hundred and fifty eight and keep Chartered indemnified against all debts and liabilities including further or contingent liabilities arising under any contract or arrangement or arising in connection with any investments acquired by the Investment Company hereunder (but excepting liabilities to taxation of the United Kingdom or any other country) being debts or liabilities incurred or undertaken by Chartered in the course of dealing in investments or in connection with investments in which it has dealt

3. FOR the purpose of avoiding doubt it is hereby declared that :-

(a) the assets hereby sold shall not include any shares or stock held by Chartered in The Rhodesia Railways Trust Limited Cecil Holdings Limited Cecil Investments Limited The British South Africa Company Management Services Limited Leepons Limited Charter Properties (Pvt) Limited The British South Africa Company Estates Products (Private) Limited New Rhodesia Investments

Limited or Rhodesian Milling and Manufacturing Company
(Pvt) Limited (all such shares or stock being
permanent holdings of Chartered) or any loan made to any
such company;

- (b) cash including cash on deposit or short term loans
Treasury Bills whether of the United Kingdom or any
other country and tax reserve certificates other than
the following :-

Tax Reserve Certificates of the United Kingdom	£2,138,950. 0.0.
Union of South Africa Government Compulsory Loan in respect of Income Tax	£ 492.19.0.
Treasury Bills of the Federation of Rhodesia and Nyasaland	£525,000. 0.0.
Short term loans to U.K. Corporations	£400,000. 0.0.

- are not included in the assets hereby agreed to be sold;
- (c) no part of the office premises or office equipment of
Chartered (except the necessary records relating to
investments) no loans to staff and no rights or
liabilities under contracts for the employment of staff
or for office services are included in the assets hereby
agreed to be sold or the liabilities to be taken over;
- (d) the rights and liabilities to be taken over shall
include inter alia any right or liability of Chartered
to subscribe for shares or securities or to make loans
which arises in relation to the matters briefly
specified in the Schedule hereto; and
- (e) the investments which form the Unclaimed Dividend Fund
of Chartered are not included in the assets agreed to
be sold

4. THE price to be paid by the Investment Company (in
addition to the taking over of debts and liabilities as

above appears) shall be calculated as follows :-

- (a) the assets mentioned in sub-paragraph (a) of Clause 1 shall be valued in the case of quoted investments at mid-market price at the close of business on the Twentieth day of March One thousand nine hundred and fifty eight and in the case of investments not quoted on a Stock Exchange at such value at the close of business on the Twentieth day of March One thousand nine hundred and fifty eight as the members of the Executive Committee of the Board of Chartered may certify to be the fair market value thereof;
- (b) to such value shall be added the sum of One pound in respect of goodwill;
- (c) there shall be deducted the amount of the debts taken over by the Investment Company;
- (d) subject as mentioned in the next paragraph there shall be made such further adjustments if any by way of addition to or deduction from the figure ascertained in accordance with sub-paragraphs (a) (b) and (c) as may be certified by the members of the Executive Committee of the Board of Chartered to be necessary or proper in respect of the value of any other asset or in respect of any other liability taken over under the foregoing provisions hereof; and
- (e) in the case of any contract or arrangement which is taken over (including any liability to subscribe or make loans) being

a contract or arrangement under which payments are to be made or received for a consideration to be received or furnished it shall be assumed (unless payments have been made or received in advance or there are other special circumstances) that the payment and consideration under the contract or arrangement will be of equal value and that accordingly no addition to or deduction from the price falls to be made in respect of such contract or arrangement

5. THE Investment Company shall pay and satisfy the said price by payment thereof to Chartered in full in cash
6. THE Investment Company shall without investigation requisition or objection accept the title of Chartered to the assets hereby agreed to be sold
7. THE formal transfers of investments and assets and the execution of all other documents necessary to complete the said sale and the payment and satisfaction of the said purchase price shall be effected at 11 Old Jewry aforesaid on the Twentieth day of March One thousand nine hundred and fifty eight or so soon thereafter as may be practicable
8. NOTWITHSTANDING that such transfers or other documents may not have been completed on the Twentieth day of March One thousand nine hundred and fifty eight or that the said price may not on that date yet have been paid or satisfied Chartered shall at the close of business on that date put the Investment Company into possession of all the assets hereby agreed to be sold and as regards any such assets not formally transferred shall from such close of business until actual transfer hold the same as nominee for the Investment Company and exercise any rights arising out of or exercisable in relation to such assets in such manner as the Investment Company shall direct to the intent that

from such close of business the Investment Company shall be entitled to deal in and enjoy the benefit of such assets on its own account

9. IF as regards any asset hereby agreed to be sold it shall prove impracticable formally to transfer the same to the Investment Company by reason of any restriction on transfer in the Articles of Association of a company or for any similar reason Chartered shall continue to hold such asset as a nominee for the Investment Company and shall exercise any rights arising out of or exercisable in relation to such asset in such manner as the Investment Company shall direct

10. ANY dividends or interest received in respect of the assets sold hereunder after the Twentieth day of March One thousand nine hundred and fifty eight shall belong to the Investment Company notwithstanding that such dividends or interest may relate wholly or in part to a period before the Twenty first day of March One thousand nine hundred and fifty eight

11. NOTHING herein contained shall affect the right of Chartered to continue to carry on its business by exploiting its mineral concessions or in any way other than by dealing in investments

IN WITNESS whereof the parties hereto have caused their Common Seals to be hereunto affixed the day and year first before written

SCHEDULE over ...

THE SCHEDULE above referred to

1. Western Rift Exploration Company Limited an undertaking has been given by Chartered to subscribe (by way of sub participation through the Anglo American Corporation of South Africa Limited) for 12½% of this Company's capital of £1,000,000. Chartered has already subscribed for 21,875 shares of £1 each which were issued at a premium of £1.

2. The Rhodesian Iron and Steel Company (Private) Limited under an agreement dated 28th February 1957 Chartered is obliged to subscribe for :-

- (i) 250,000 shares of £1 each to be issued by R.I.S.C.O. for cash at par; all have been issued, but only 3d. has been paid thereon; and
- (ii) £950,000 in First or Second Debenture Stock to be issued by R.I.S.C.O. for cash at par, carrying an option to subscribe for further shares on specified terms.

3. The Government of the Federation of Rhodesia and Nyasaland

(a) the Kariba Scheme Chartered has undertaken to lend £4,000,000, of which it has already lent £2,100,000, on terms expressed in a letter from Chartered to the Government dated 6th April, 1956.

(b) the National Archives Chartered has undertaken to lend the Government (or, on the Government's guarantee, a trust formed for the purpose) up to £250,000 as and when required at 5% per annum repayable in instalments by 30th June 1977.

£ 3,500,000
as at 30/1/60

(c) the Land Settlement Scheme Chartered has undertaken to lend £200,000 to the Government to be secured by 5% Notes redeemable over 20 years.

4. Welkom Gold Mining Company Limited an undertaking has been given by Chartered to subscribe (by way of sub participation through the Anglo American Corporation of South Africa Limited) for 5% of 1,250,000 shares of £1 each to be issued at 22/6d. and to lend 5% of £2,500,000 at 6% until 30th December, 1959. It also has an option to subscribe for further shares at 27/6d. The original subscription for shares has been made and the shares sold. Chartered has lent £57,074 out of its commitment of £125,000.

5. Kachalola Limited Chartered has agreed to lend £20,000 interest free until 30th June, 1960, of which £10,000 has been lent.

6. Buzawi Schools Limited Chartered has undertaken to subscribe £7,000 2% Debentures and to lend £3,000 at 1% over current Bank of England rate repayable in 5 years.

7. Rhodesian Anglo American Limited Chartered has undertaken to subscribe £37,652 1% Loan Stock at 295 per cent.

8. Founders Building Society Chartered has undertaken to deposit £25,000 with a London Bank on fixed deposit for 12 months at 4% of which £12,500 has already been deposited.

9. Martebeestfontein Gold Mining Company Limited

and Buffelsfontein Gold Mining Company Limited Chartered
has agreed to subscribe 5% of the obligations of the Anglo
American Corporation of South Africa Limited to these two
companies under a Memorandum of Agreement dated 20th
October, 1952 and otherwise in connection with that Memorandum
of Agreement.

THE COMMON SEAL of THE BRITISH)
SOUTH AFRICA COMPANY was here-) C.S.
unto affixed in the presence of:)

T.E. Robins Director

E.D. Hawksley Secretary

THE COMMON SEAL of THE BRITISH)
SOUTH AFRICA COMPANY INVESTMENTS) C.S.
LIMITED was hereunto affixed in)
the presence of :-)

Leo d'Erlanger Director

E.D. Hawksley Secretary

DATED 20th March, 1958

THE BRITISH SOUTH AFRICA
COMPANY

and

THE BRITISH SOUTH AFRICA
COMPANY INVESTMENTS
LIMITED

Copy/

A G R E E M E N T

COWARD, CHANCE & CO.,
St. Swithin's House,
Walbrook,
London, E.C.4.

August, 1956.

Mr. E. S. Newson,
 Assistant General Manager,
 The British South Africa Company,
 P. O. Box 361,
SALISBURY.

Dear Sir,

I refer to your letter Ref. No. 141/1 of 11th June, 1956.

I am now able to advise you that the Government estimates that it will require to draw as follows against the loan to be made by your Company -

Year ending 30th June, 1957	-	£1,000,000
" " " " 1958	-	£1,100,000
" " " " 1959	-	£1,150,000
" " " " 1960	-	£ 550,000
" " " " 1961	-	£ 200,000
		<u>£5,000,000</u>

As regards the year ending the 30th June, 1957, it is estimated that drawings of £350,000 each will be required in November, 1956, and January, March and May, 1957. As regards succeeding years, I should be glad if you would accept the figures shown above, without details of the dates when the instalments are to be drawn, until more precise estimates of expenditure for those years can be drawn up. We shall provide these details as soon as we are able.

Yours faithfully,

*Revised
 P2 para 2 Chief
 and for his information
 Wood*

for: ASSTANT SECRETARY TO THE FEDERAL TREASURY.

13th. July, 1956.

The Resident Director,
The British South Africa Company Ltd.,
P.O. Box 364,
SALISBURY.

Sir,

Kariba Finance.

I am directed to refer to your Company's loan of £4,000,000 for the Kariba project and to inform you that the rate of interest determined for the loan of \$80,000,000 from the International Bank for Reconstruction and Development for the same project is 5% (five per cent.) per annum.

In terms of the agreement entered into between your Company and the Federal Government this rate of interest will, therefore, also apply to your Company's loan.

I am, Sir,

Your obedient servant,

SECRETARY TO THE FEDERAL TREASURY.

Minute**DRAFT****EXECUTIVE COUNCIL**

No.



CONSENT TO ASSIGNMENT TO THE BRITISH SOUTH AFRICA COMPANY INVESTMENTS LIMITED OF THE RIGHTS AND OBLIGATIONS OF THE BRITISH SOUTH AFRICA COMPANY IN RESPECT OF THE LOAN OF £4,000,000 BY THAT COMPANY TO THE FEDERAL GOVERNMENT TO FINANCE THE KARIBA PROJECT.

MINISTERS have the honour to recommend that His Excellency the Governor-General may be pleased, in terms of article 36 of the Constitution and all other powers enabling him in that behalf, to consent to the assignment to the British South Africa Company Investments Limited of the rights and liabilities of the British South Africa Company under the Agreement concluded in pursuance of Executive Council Minute No. 102 of 1956, and accordingly to authorize the Minister of Finance to sign a consent form to such assignment in the form set out in the attached draft letter.

OFFICE MEMORANDUM

TO: Files

DATE: September 19, 1960

FROM: H. L. Parsons *HLP*

SUBJECT: Conversation with Mr. Ficker,
Adviser, U.S. Senate Committee
on Interstate and Foreign Commerce

Mr. Ficker came to see me on Tuesday, September 13, 1960. He said he had just returned from a visit to Africa. His trip covered the Federation of Rhodesia and Nyasaland, Kenya, Tanganyika, Nigeria and Ghana during which he discussed specific development projects to which he wished to call the Bank's attention.

Kenya

The Government wanted to move ahead speedily with the project to settle Africans in the Highlands. I told Mr. Ficker that the Bank had planned to have a mission visit Kenya in October to look at the project.

Tanganyika

The Government desired to build an airstrip at Arusha to handle jet planes so as to attract tourists for game hunting and to see the natural beauty of the area. Hotels would also have to be built to attract tourists away from Nairobi - or, at least, to attract them onward from Nairobi. South African Airways thought it would be a good idea since their future in Kenya was somewhat doubtful. I told Mr. Ficker that this type of financing was not normally done by the Bank. First, if it were to be a profitable venture, private investors should be willing and anxious to finance it, as had been done in many parts of the world. Second, the Bank took productive projects as its field of operation and such projects were sufficiently numerous that the Bank usually had more demand for loans than it could satisfy.

✓ Southern Rhodesia

According to Mr. Ficker, there were two possible dam sites with irrigation potential in the Hippo Valley on the Bengala River and the Chiredzi River. Large numbers of Africans could benefit through farming opportunities and greatly increased agricultural output if these dams could be built. His estimate was that \$25 million would be required for the foreign exchange component. He said that the Minister of Agriculture did not know how to go about trying to get financial assistance; would the Bank be interested and what should the Rhodesians do; how should they approach the Bank.

I told him that the Bank and Southern Rhodesia had had long and cordial relations. Undoubtedly, they knew how the Bank operates and how to go about getting in touch with the Bank. I commented further that I would

*Copies in Kenya - land settlement
Jang. Gen. n.p.s -
Nigeria - Hydro -*

think anyone who had been approached with a view to obtaining financial assistance on a project of this sort would wish to know a good deal about the proposal. They would want a study by a reliable firm or group covering the cost and return aspects of the project, including an estimate of the feasibility of constructing the project. I could not say whether we would be interested in the project. We could not be sure until we knew what a project was all about and we had studied it thoroughly both here and on the site.

Nigeria

Mr. Ficker commented that the potential Niger River development looked most promising. He had seen the site. He felt that constructing the dam could have beneficial effects throughout the entire Nigerian economy. He further commented that the Nigerians whom he had seen appeared to be most intelligent and capable.

HLP:Parsons:mc

cc: Messrs. Cope/Lejeune
Fajans/Calika
McIvor

Withdrawal Applications
Mr. G. R. Peterson.

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. Box 630

TELEPHONES: 25958
20556
29231/2/3

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

142/3

RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

7th September, 1960.

The Treasurer,
International Bank for Reconstruction
and Development,
1818 H Street, N.W.,
WASHINGTON, 25, D.C.,
U.S.A.

Dear Sir,

LOAN IB 145 RN.
AUTHORISED SIGNATORIES.

I refer to my letter 142/3 dated 12th October, 1956, enclosing a certified copy of the resolution of the Board relating to signatures on applications for withdrawal from the loan.

... The Board has resolved that the name of Mr. G. R. Peterson, General Manager, be added to the list of authorised signatories with effect from 1st October, 1960, and I enclose a certified copy of a resolution of the Board passed on 6th September, 1960. I will send you a specimen signature of Mr. Peterson as soon as possible after his return to the Federation at the end of September.

Yours faithfully,


SECRETARY

RJH/PMN

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. Box 630
25958
TELEPHONES: 20556
29231/2/3
TELEGRAMS: "HYDRO"
SALISBURY.

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

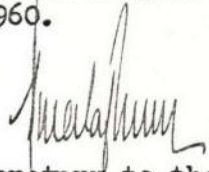
RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

RESOLUTION OF FEDERAL POWER BOARD

RESOLVED

that as from 1st October, 1960,
Mr. G. R. Peterson, General Manager,
be and is hereby authorised to sign
applications for withdrawals from
the loan from the International Bank
for Reconstruction and Development,
in addition to the persons named in
the resolution of the Board dated
31st August, 1956, and that the Bank
be notified accordingly.

I, RONALD JOHN HARVEY, hereby certify that the foregoing
is a true copy of a Resolution adopted by the Federal Power
Board on 6th September, 1960.


Secretary to the Federal Power Board

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

INCOMING WIRE

INTERNATIONAL FINANCE
CORPORATION

DATE OF WIRE: AUGUST 19
 LOG NO.: RC 2
 TO: SPOTSWOOD INTBAFRAD
 FROM: SALISBURY

ROUTING

ACTION COPY: TECH OP
 INFORMATION COPY:
 DECODED BY:

TEXT: NUMBER 998 GERDES KAISER ENGINEERING HAS REQUESTED WORLD BANK SHOULD MAKE AVAILABLE FOR HIS INSPECTION IMPRESIT BID UNIT PRICES KARIBA STOP OUR CONSULTING ENGINEERS AND I BOTH CONSIDER THIS INADVISABLE AND UNFAIR TO IMPRESIT REGARDS

ANDERSON 998

СОВЕТСКИЙ

19 9 5 41 190

ПОСЛАНИЕ

СООБЩЕНИЕ О РАБОТЕ КОММУНИСТИЧЕСКОЙ ПАРТИИ

И РАБОТЫ КОММУНИСТИЧЕСКОГО РАЙОНА

КОМУНИСТИЧЕСКОГО РАЙОНА

КОМУНИСТИЧЕСКОГО РАЙОНА

ДЕЛ

УЧЕТ

КОМУНИСТИЧЕСКОМУ РАЙОНУ

УЧЕТ

КОМУНИСТИЧЕСКОМУ РАЙОНУ

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УЧЕТ

УЧЕТ

РЕКОММЕНДАЦИИ И ПОДСОБЕДИТЕЛЬНЫЕ
МАТЕРИАЛЫ

КОМУНИСТИЧЕСКОМУ РАЙОНУ

КОМУНИСТИЧЕСКОМУ РАЙОНУ

August 25, 1960

Sir Duncan Anderson, K.B.E., T.D.
 Chairman
 Federal Power Board
 P.O. Box 630
 Salisbury
 Federation of Rhodesia
 and Nyasaland

Dear Sir Duncan:

Mr. Lejeune is on leave and in his absence I am writing to thank you for your letter of August 17, reference 3/55.

I note that the Board has decided to promote Mr. Peterson to the position of General Manager effective as of October 1, 1960, and that this arrangement has the approval of the Federal Government.

We would not wish to comment on this appointment except to say that we see no reason to doubt Mr. Peterson's qualifications for this post and that we are glad to see it held by someone with whom we have had such pleasant working relations.

I trust that we shall still be hearing from you before you leave the Board and that thereafter you will keep in touch with your friends at the Bank.

With kindest regards,

Yours sincerely,



S. R. Cope
 Director of Operations
 Europe, Africa and Australasia

JFajans/HLParsons/SRCope/wmf

cc: Messrs. Lejeune/Parsons

Squire

Spottswood/Piccagli

Verheyen

Bateson/Scott

FROM : SIR DUNCAN ANDERSON, K.B.E., T.D.

CHAIRMAN'S OFFICE
TELEPHONE 25958

FEDERAL POWER BOARD,
P. O. BOX 630,
SALISBURY,
S. RHODESIA.

Reference. 3/55.

17th August, 1960.

Dear Mr. Lejeune,

In one of the letters sent to the Bank at the time of the loan agreement, we undertook to avail ourselves of the Bank's views on persons under consideration for senior appointments. As you know, I shall be leaving the Board early in 1961 and it has always been assumed that, after the end of the main construction period and the beginning in earnest of operation, the Board should have a General Manager.

Before Mr. Peterson was appointed to the post of Deputy Chief Executive, the Bank was consulted and expressed its approval of his appointment. At the time of his appointment, it was taken that, in due course, subject to performance, he would become General Manager.

At its last meeting, the Board resolved that he should be appointed General Manager with effect from 1st October, 1960. His qualifications are known to you and do not call for repetition. The Board considers his work as Deputy Chief Executive has been efficient and fully entitles him to promotion.

The arrangement provides for an overlap which allows him to settle down as General Manager under my guidance and, at the same time, allows me to deal with certain matters which have been peculiarly my own and call for intimate knowledge.

Although Mr. Peterson is being promoted, rather than selected for appointment I felt that I should write and let you know. The arrangements being made have the approval and blessing of the Federal Government.

Yours sincerely,

D. Anderson

Michael L. Lejeune, Esq.,
Assistant Director,
Area Department,
International Bank for Reconstruction and Development,
1818, H Street, N.W.,
WASHINGTON, 25, D.C.

ack Aug. 25/60

145 RN - adun

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. Box 630

25958
TELEPHONES: 20556
29231/2/3

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

142/5 (6)

RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

11th August, 1960.

The Treasurer,
International Bank for Reconstruction
and Development,
1818 H Street, N.W.,
WASHINGTON 25, D.C.
U.S.A.

Dear Sir,

Loan IB 145 RN
Loan Service Payments

I refer to your letter of July 13, 1960, and to my interim reply 142/5(3) of July 21. The Board has now been informed by the Federal Treasury that:-

"After careful consideration of the International Bank's proposal, both the Treasury and the Bank of Rhodesia and Nyasaland are firmly opposed to your Board availing itself of the offer of the International Bank to act as its agents in acquiring foreign currencies against sterling or dollars to enable the Board to meet its loan commitments."

In view of this I am to state that the Board will not avail itself of your offer.

I shall be grateful if you can let me have a note of the procedure to be followed in remitting the charges due on December 1, 1960, as requested in my letter of July 21.

Yours faithfully,

W. S. Bosworth

WJSB/DMJ

Chief Accountant

Replied on 8/5.

RECEIVED
BANK MAIL ROOM

1960 AUG 15 PM 12:11

TO: DIRECTOR, FEDERAL BUREAU OF INVESTIGATION
FROM: SAC, [illegible]

RE: [illegible]

[Faded typed text, likely the main body of the letter]

[Faded typed text, likely the closing of the letter]

FEDERAL BUREAU OF INVESTIGATION
U.S. DEPARTMENT OF JUSTICE

[Faded typed text, possibly a signature block or distribution list]

FEDERAL BUREAU OF INVESTIGATION

Mr. Rutland
Mr. Perram
W. Matthews/ mh.

AIR MAIL

Cooper Brothers & Co.
P.O. Box 1219
Roslin House
Baker Avenue
Salisbury, Southern Rhodesia.

August 1, 1960

Re: Federal Power Board
Loan No. 145 RH.

Gentlemen:

In response to your letter of July 20, 1960, we are giving below a statement of account for subject Loan, showing principal balances only as of June 30, 1960.

<u>Currency</u>	<u>Amount</u>	<u>U.S. dollar equivalent</u>
<u>Balance held by IBRD</u>		
United States dollars		\$ 1,852,536.23
Australian pounds	403,982-5-7	404,920.30
Belgian francs	39,872,542	797,450.34
Deutsche marks	3,397,277.27	809,313.67
New French francs	6,191,724.09	1,375,994.08
Pounds sterling	12,043,120-2-11	33,720,736.54
Swedish kronor	21,659.93	4,186.94
Swiss francs	2,937,918.86	683,528.78
South African pounds	772,113-3-10	2,161,916.96
Total		<u>\$ 12,310,584.34</u>
<u>Balance held by Third Parties</u>		
United States dollars		30,554,000.00
Undisbursed committed balance		7,135,415.66
Total Loan Amount		<u>\$ 80,000,000.00</u>

Sincerely yours,

cc: Federal Power Board
Reliance House
Moffat Street
Salisbury, Southern Rhodesia.

Walter C.P. Rutland
Chief, Finance Division

[Handwritten initials and marks on the left margin]

COOPER BROTHERS & CO.

CHARTERED ACCOUNTANTS (S.R.)

ERIC K. HOCKEY.
REGINALD W. HOCKEY.
RICHARD D. JUDD, D.S.O., M.C.
MAURICE W. P. HILL.
ERIC E. SHEET.
CYRIL L. REED.

JOHN L. FLETCHER.
OLIVER J. IRWIN.
CHARLES H. STUART.
S. JOHN PEARS.
HENRY A. BENSON, C.B.E.
J. FRANCIS SHEARER, O.B.E.

TELEPHONE: SALISBURY 27461
TELEGRAMS: SALTIC, SALISBURY

P. O. BOX 1219,
ROSLIN HOUSE,
BAKER AVENUE,
SALISBURY,
S. RHODESIA.

BANCROFT, BULAWAYO, CHINGOLA, FORT VICTORIA, GWELO,
KITWE, LUSAKA, NDOLA, SALISBURY.

COOPER BROTHERS & CO. AND COOPERS & LYBRAND.

UNITED KINGDOM, UNION OF SOUTH AFRICA, EAST AND WEST AFRICA,
UNITED STATES OF AMERICA, CANADA, MEXICO,
AUSTRALIA, NEW ZEALAND, IRAN, MALAYA, SINGAPORE,
BELGIUM, FRANCE, GERMANY, HOLLAND, ITALY, SWITZERLAND.

20th July, 1960

The Treasurer,
The International Bank for Reconstruction
and Development,
1818 H Street N.W.,
WASHINGTON 25,
D.C.

Dear Sir,

re: Federal Power Board, Federation
of Rhodesia & Nyasaland

We are engaged upon the audit of the Federal Power Board and would be grateful if you would confirm the amount of the loans withdrawn by the Board at 30th June, 1960.

We are, dear Sir,
Yours truly,

Cooper Brothers Co

RDJ/FS

Authority dated 18 July from Power Board attached

aa. Aug-11/60

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. BOX 630

25958
TELEPHONES: 20556
29231/2/3

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

146 (106)

RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

18th July, 1960.

The Treasurer,
International Bank for Reconstruction
and Development,
1818 H Street, N.W.,
WASHINGTON 25, D.C.
U.S.A.

Dear Sir,

The Board's auditors, Messrs. Cooper Brothers & Co., Chartered Accountants (S.R.), Roslin House, Baker Avenue, Salisbury, will be writing to you for information in connection with the audit of the accounts of the Board for the year ended 30th June, 1960.

I shall be grateful if you will give them such information as they may require.

Yours faithfully,



Chief Accountant

c.c. Cooper Brothers & Co.

PWP/DMJ

FEDERAL POWER BOARD

RECEIVED
BANK MAIL ROOM

1960 JUL 23 AM 12:00

SALISBURY

THE (100)

BOND

The Interstate
Investment Bank for Reconstruction
and Development

1111 A Street, N.W.
Washington, D.C. 20004

Dear Sir:

The Board's auditors, Messrs. Goffin & Partners
1000 Connecticut Avenue, N.W., Washington, D.C., advised that
information in connection with the audit of the accounts
of the Board for the year ended 30th June, 1960.

I shall be grateful if you will give them such
information as they may require.

Yours faithfully,

Chief Accountant

c.c. Water Resources Co.

10/11/60

FEDERAL POWER BOARD

P.O. Box 630

TEL. 25958
20556

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

RELIANCE HOUSE,

MOFFAT STREET,

SALISBURY,

S. RHODESIA.

C.2/24 (85)

16th July, 1960

The Acting Chief,
Public Utilities Division,
Department of Technical Operations,
International Bank for Reconstruction and Development,
1818, H Street, N.W.,
WASHINGTON, 25, D.C.

Dear Sir,

LOAN 145 RN - KARIBA PROJECT

Thank you for your letter dated 5th July, 1960.

It is correct that a programme of drilling, jetting and grouting is being carried out at the south flank of the Kariba Dam and that it has recently been decided to extend it substantially.

The south flank of the dam is founded on quartzite which, although it is hard rock, is jointed and fissured to a greater extent than the gneiss which underlies the whole of the rest of the dam.

Jetting and grouting in this area started early in 1959 and has continued since then. In May, 1960, the consulting civil engineers recommended to the Board that the work should be extended considerably by drilling holes at closer centres and by jetting and grouting at smaller vertical stages. Copies of the reports, dated 20th May, 1960 and 24th May, 1960 are enclosed, together with copies of the drawings referred to. In addition, there are two further drawings indicating the general area where the work is being carried out.

The estimated cost of the additional work was given as £840,000 and it is possible that there will be some saving on this. The work has commenced and it is hoped to complete it in May, 1961.

It had been envisaged for some time that additional work would be required in this area, although not to the extent now proposed. Early in 1960, the sum of £250,000 was provided in the estimates. In the last re-estimate for the civil engineering works, it was found possible to reduce certain contingency items and to make other savings. The revised estimate

/ of cost,

Document Kariba # 92.

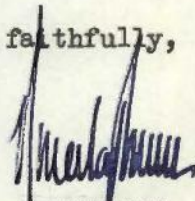
The Acting Chief,
Public Utilities Division,
Department of Technical Operations,
International Bank for Reconstruction
and Development,
WASHINGTON

16th July, 1960

of cost, therefore, for the whole work is only £119,000 greater than that given in the December Quarterly Report.

The proposals and reports were approved by the Board, after full discussion with the consulting engineers. While some concern was felt at the high cost of the work and the lateness of the recommendations, the Board felt that it must accept the advice given.

Yours faithfully,



SECRETARY

FWB/ZS

RECEIVED
BANK MAIL ROOM
1960 JUL 22 PM 4:49

EMR/32

RECEIVED

INTERNATIONAL BANK FOR RECONSTRUCTION
AND DEVELOPMENT

It was noted that the Board of Directors
and the interests of the shareholders of the Bank
will be concerned with the high cost of the work
being done and the question of the continuing
the Board and the Board will be concerned of the

Board of Directors of the Bank in the present
of work, therefore, for the work to be done

INTERNATIONAL

JULY 22, 1960

and development
International Bank for Reconstruction
and Development of Economic Operations
World Bank
The World Bank

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: July 6, 1960

TO: R. W. Phelps, Finance Division, Federal Ministry of Finance, Lagos, Nigeria.

FROM: William Diamond

FILED UNDER: Nigeria - Hydroelectric project.

SUMMARY: Acknowledging letter of June 2, 1960, and giving information used in connection with the Kariba scheme with regard to the Rhodesian electric power legislation.

AIRMAIL

July 5, 1960

Secretary
Federal Power Board
P.O. Box 630
Salisbury, S. Rhodesia

Re: Loan 145 RN - Kariba Project

Dear Sir:

It is understood that consideration is being given to an extensive grouting program of the abutments and foundations of the Kariba dam.

We should be grateful if you would advise us of the scope of the work envisaged, its timing and the estimated cost.

It would be appreciated if your or your consultants report could be forwarded to the Bank on this matter as soon as your grouting program has been decided upon. We assume this would show the location and depth of the grout holes, type of grouting (i.e. consolidation or curtain) and other details of the proposed work.

Sincerely yours,

Neil Bass
Acting Chief, Public Utilities Division
Department of Technical Operations

cc: Messrs. Squire
Hathaway
Parsons
Delany
Spottswood/Division File

EPDelany/NBass:lbp;ls

June 17, 1960

My dear Phelps,

Thank you very much for your several letters:
 No. F. 10371/S89/T/14, dated June 1 and enclosing a copy of the instrument appointing the Commission of Enquiry into the affairs of the Nigerian Railway Corporation; No. F. 11547/S4/34, dated June 2; No. F. 10371/S89/117, dated June 7; No. F. 11481/S2/, dated June 8, and No. F. 11543/S1/58, dated June 8. ✓ Nigeria - hydro

Not sent to files.
 I have passed on your message to Mr. Black. I hope shortly to be able to write to you about the Kariba legislation and the question of electric power charges. We are actively considering the question of an economic adviser, and you will hear from us in due course. As soon as we have consulted with the U.N. Special Fund on the question of the abandonment of the Donko Site, we shall be writing to you on this matter too.

With best regards,

Yours sincerely,

William Diamond
 Department of Operations
 Europe, Africa and Australasia

R. W. Phelps, Esq.
 Federal Ministry of Finance
 Lagos, Nigeria

RFSkillings:amg

Copies in UNJ - 193
 Nigeria - hydro
 Nigeria - Gen. rep.

CROSS REFERENCE SHEET

COMMUNICATION: Letter F. 11547/S4/34

DATED: June 2, 1960

TO: Mr. Diamond

FROM: R. W. Phelps, Federal Ministry of Finance, (Finance Division) Lagos, Nigeria.

FILED UNDER: Nigeria - Hydroelectric project

SUMMARY: Requesting information about the requirements of the Central African Government in connection with the Kariba scheme for use in Niger Dams investigations.

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: June 2, 1960

TO: T.S. Bell, Esq. Undersecretary to the Ministry of Power, Box 8158,
Causeway, Salisbury, Southern Rhodesia.

FROM: Michael L. Lejeune

FILED UNDER: Federation of Rhodesia and Nyasaland - General negotiations.

SUMMARY: Acknowledging May 19th. letter & comprehensive record of the meeting
on the Nkula Fall project.

Having read record have one comment to make, editorially perhaps,
delete the words "and was independent of the Kariba scheme" in the
fourth and fifth line of paragraph.

CROSS REFERENCE SHEET

COMMUNICATION: Letter

DATED: May 19, 1960

TO: Mr. M. L. Lejeune

FROM: T.S. Bell, Ministry of Power, P.O. Box 8158, Causeway, Salisbury,
Federation of Rhodesia and Nyasaland.

FILED UNDER: Federation of Rhodesia and Nyasaland - General negotiations.

SUMMARY: Enclosing record of meeting in Salisbury May 18th. when the
Nkula Hydro-electric Scheme was discussed.

OUTGOING WIRE

RN-7145

TO: ANDERSON
HYDRO
SALISBURY

DATE: APRIL 20, 1960

CLASS OF SERVICE: LT

COUNTRY: SOUTHERN RHODESIA

Rest

TEXT:
Cable No.:

MR. AND MRS. ALDEWERELD ARRIVE MAY 13TH, LEJEUNE 14TH, MR. AND MRS. BLACK,
MISS LINAHAN AND GIBBS 16TH STOP IN EACH CASE THEY WILL BE TRAVELLING
ON BOAC 115 ARRIVING SALISBURY 12:05 PM REGARDS

LEJEUNE

Sent by PCA 4/21

NOT TO BE TRANSMITTED

MESSAGE AUTHORIZED BY:

NAME Michael L. Lejeune
DEPT. OPERATIONS, E.A.A.

SIGNATURE *Michael L. Lejeune*
(SIGNATURE OF INDIVIDUAL AUTHORIZED TO APPROVE)

CLEARANCES AND COPY DISTRIBUTION:

For Use by Archives Division

Michael L. Lejeune/pnn
ORIGINAL (File Copy)

(IMPORTANT: See back of yellow copy for guide in preparing form)

Checked for Dispatch: _____

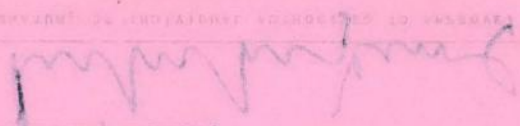
(INFORMATION) See back of letter only for details in brackets

Checked for signature:

WITNESS: J. P. [unclear] (1910 copy)

FOR USE OF RECEIVING DIVISION

SIGNATURE



DEPT

ORGANIZATION: [unclear]

NAME

WITNESS: J. P. [unclear]

MESSAGE AUTHORIZED BY:

ORGANIZATION AND COPY DISTRIBUTION:

NOT TO BE REPRODUCED

Drop date

27 11 41

URGENT

ON NOV 17 1950 12:00 PM

MISS [unclear] AND [unclear] [unclear] IN EACH CASE THEY WILL BE [unclear]

AND [unclear] [unclear] [unclear] [unclear] [unclear] [unclear] [unclear] [unclear]

CLASS: [unclear]

TEXT: [unclear]

CONTROL: [unclear]

SOUTHERN BROTHERS

WITNESS:

[unclear]

TO:

ANDERSON

CLASS: [unclear]

TEXT: [unclear]

TO:

DATE:

NOV 17 1950

REPRODUCTION AND DECLASSIFICATION

OUTSIDE USE

REPRODUCTION AND DECLASSIFICATION

(11-88)
FORM NO. 52

27 11 41

April 19, 1960

Mr. Charles Jagow
Metropolitan Life Insurance Co.
1 Madison Avenue
New York, New York

Dear Charlie,

Pursuant to your request, I am enclosing herewith a
copy of Loan Regulations No. 4, dated February 15, 1955.

Sincerely yours,

Lester Nurick
Assistant General Counsel

Enclosure

LNurick:vv

BN-6145

INCOMING WIRE

RC 13

DATE OF WIRE: APRIL 19, 1960

TO: LEJEUNE IBRD

FROM:
SALISBURYRHOD

TEXT:

ROUTING	
ACTION COPY TO	MR. LEJUNE
INFORMATION COPY TO	✓
Decoded By	

NUMBER 902 COULD YOU PLEASE LET US KNOW FLIGHT
 NUMBERS AND ETA MEMBERS BANKS PARTY FOR OPENING
 KARIBA REGARDS
 ANDERSON

Handwritten notes:
 Recd 11:45 AM 4/19/60 → 11:50 AM

ORIGINAL

ORIGINAL

TYPED

GENERAL FILES
CORRESPONDENCE

APR 20 10 53 AM 1960

VIDEON

RECEIVED

RECEIVED AND BY MEMORANDUM DATED APRIL 1960

RECEIVED FOR THE RECORD OF THE BOARD OF DIRECTORS

RECEIVED

RECEIVED

RECEIVED

RECEIVED

RECEIVED

Decoded by	
RECORDED BY	
INDEXED BY	
FILED BY	

INCOMING MAIL

RECEIVED BY

RECEIVED BY

CROSS REFERENCE SHEET

COMMUNICATION: Memorandum

DATED: April 8, 1960

TO: Mr. Norman Jones

FROM: L. Nurick

FILED UNDER: East Africa - Loan 110.

SUMMARY: Re loans 110 EA and 115 RN.

Requesting advice on how disbursements on these two loans have been made.

General File

April 7, 1960

Mr. W.J.S. Bosworth
Federal Power Board
Reliance House
Moffat Street
Salisbury, Southern Rhodesia

Ref: IB 145 RN

Dear Mr. Bosworth:

We refer to our letter of March 22, 1960 to the Secretary of the Federal Power Board, by which we agreed to finance, with the proceeds of the loan, the total of the interest and charges due June 1, 1960 even though this will exceed the amount originally allocated for this purpose by about \$150,000.

In this connection, we shall apply part of the June 1, 1960 payment against the balance of your Withdrawal Application No. 1, dated September 3, 1956, for \$7,000,000.00. As the exact amount of the excess of the interest and charges due on June 1 over this balance cannot be computed now, we suggest the following procedure.

About May 25, we shall cable you the amount of interest and charges in excess of the balance remaining under Application No.1. Upon receipt of this cable, you would airmail to us a supplementary withdrawal application covering the excess. A draft of this application is attached.

The processing of this supplementary application will result in over-drawing the category "Interest and other charges on the Loan" but, as indicated in our letter of March 22, the List of Goods will be adjusted at your request at a later date.

Very truly yours,

Peter G. Ramm
Assistant Treasurer

MVerheyen:rs

Cleared with Area & Legal Departments
cc: Yellow 145 Form & Procedure
Mr. Fajans
Mr. Bateson
Mr. Rutland
Mr. Verheyen

Date:
Loan No. IB 145 RN
Applicational Serial No:

APPLICATION FOR WITHDRAWAL IN UNITED STATES
DOLLARS AND/OR THE EQUIVALENT THEREOF IN
OTHER CURRENCIES TO MEET INTEREST, COMMITMENT
AND OTHER CHARGES DURING CONSTRUCTION ON THE
LOAN FROM THE INTERNATIONAL BANK FOR RECON-
STRUCTION AND DEVELOPMENT

Pursuant to the Loan Agreement dated June 21, 1956, between the International Bank for Reconstruction and Development and the Federal Power Board (hereinafter called the Borrower), the Borrower hereby certifies and agrees as follows:

1. In addition to withdrawal application No. 1 dated September 3, 1956 for same purpose, the Borrower desires to withdraw from the Loan Account opened under said Loan Agreement, an amount of \$ _____ (_____ dollars) or the equivalent thereof in other currencies.
2. Said amount is required to pay the International Bank for Reconstruction and Development that part of interest, commitment and other charges on the Loan due on June 1, 1960 not covered by amounts available under Withdrawal Application No. 1, dated September 3, 1956.
3. The Borrower has not heretofore withdrawn from said Loan Account or applied for the withdrawal from said Loan Account of any amounts for the purpose of paying the International Bank for Reconstruction and Development for that part of such interest, commitment and other charges covered by this application.
4. At the date of this application: (I) there is no existing default in the performance of any of the obligations of the Borrower under said Loan Agreement, or to the best of the Borrower's knowledge and belief, of the Guarantors under the Guarantee Agreements referred to therein; and (II) the Loan Council Resolution adopted by the Loan Council of the Federation on May 24, 1956 is still in full force and effect and the aggregate of amounts borrowed and to be borrowed under all applications (including this application) made by the Borrower as of the date hereof for withdrawal from the Loan Account under said Loan Agreement does not exceed the authority contained in said Resolution.

Please make payment from the Loan Account to your order on June 1, 1960 in the amount required to pay interest, commitment and other charges on the Loan during construction on such date.

FEDERAL POWER BOARD

By: (Authorized Representative)

INCOMING WIRE

DATE OF WIRE: APRIL 7, 1960 RC 1.

TO: LEJEUNE IBRD

FROM: SALISBURY-SARHOD

ROUTING	
ACTION COPY TO	MR. LEJEUNE MR. COPE
INFORMATION COPY TO	
Decoded By	

TEXT:

— James M. Black.

NO888 YOUR TELEGRAM FOURTH GRAFFTEYSMITH HAS KINDLY ARRANGED ACCOMMODATE
 MR AND MRS BLACK AND MISS LINAHAN STOP BOB TAYLOR IS TO LOOK AFTER MR AND
 MRS ALDEWERELD STOP MR GIBBS TO BE ACCOMMODATED JAMESON HOTEL STOP
 WE WOULD BE DELIGHTED IF YOU COULD STAY WITH US STOP WE PROPOSE GOING
 KARIBA FIFTEENTH RETURNING PM SEVENTEENTH AND HOPE YOU WOULD ACCOMPANY
 STOP DISCUSSED QUESTION BUSINESS WITH TREASURY THIS MORNING STOP
 PROBABLE THEY WOULD LIKE JOINT MEETING EIGHTEENTH WITH CDC AND CDPC
 SUBJECT NKULA FALLS STOP COULD YOU AGAIN ATTEND REGARDS

ANDERSON

Kariba

ORIGINAL

April 6, 1960

George R. Peterson, Esq.,
Deputy Chairman
Federal Power Board
Reliance House
Moffat Square
Salisbury, S. Rhodesia

Dear George:

Many thanks indeed for your letter of 24th March advising me of the arrangements which you propose for the visit of Mr. and Mrs. Aldewereld. They have asked me to convey their thanks to you for the trouble you have taken and particularly for the invitation for Mrs. Aldewereld to attend the Opening Ceremony. Mr. Aldewereld is writing to Mr. R.M. Taylor in accordance with your suggestion. They fully expected you to be engaged with the arrangements for the ceremony and Mr. Taylor's invitation to stay is of course a very welcome surprise.

I have only just arrived back from another trip to Africa, this time to Sudan, so have not been able to reply to your letter earlier. I do hope your ceremony goes well and that nobody important falls into the reservoir!

My kindest regards to you and Beryl.

Yours sincerely,

P. J. SQUIRE

RN-143

TO: ANDERSON
HYDRO
SALISBURY

DATE: MARCH 30, 1960

CLASS OF
SERVICE: LETTER TELEGRAM

ref

COUNTRY: SOUTHERN RHODESIA

TEXT:
Cable No.: MANY THANKS YOUR INVITATIONS TO KARIBA OPENING WHICH MRS. BLACK AND I
AS WELL AS MR. AND MRS. ALDEWERELD, LEJEUNE, GIBBS AND LINAHAN ARE
HAPPY TO ACCEPT BEST WISHES AND PERSONAL REGARDS

EUGENE BLACK

NOT TO BE TRANSMITTED

MESSAGE AUTHORIZED BY:

NAME Eugene R. Black

DEPT. President

SIGNATURE *Marie E. Linahan*
(SIGNATURE OF INDIVIDUAL AUTHORIZED TO APPROVE)

CLEARANCES AND COPY DISTRIBUTION:

For Use by Archives Division

ORIGINAL (File Copy)

(IMPORTANT: See back of yellow copy for guide in preparing form)

Checked for Dispatch: _____

ORIGINAL (1/15/50)

CLASSIFICATION

FOR USE BY RECEIVING OFFICE

DATE

Richard S. Black

TO: DIRECTOR

FROM: RICHARD S. BLACK

RE: [REDACTED]

CLASSIFICATION AND CONTROL

NOT TO BE REPRODUCED

Drop later

ENCLOSURE

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

RE: [REDACTED]

ROUTING SLIP Date April 7

NAME	ROOM NO.
Messrs. <u>Deceagli</u>	300
<u>Verheyden</u>	A-314
<u>Bateson</u>	1110
<u>Operational Files</u>	<u>P-100</u>

Action	Note and File
Appropriate Disposition	Note and Return
approval	Prepare Reply
Comment	Per Our Conversation
Full Report	Recommendation
Information	Signature
Initial	To Handle

REMARKS

From J. Zapens

KN-714

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. Box 630
25958
TELEPHONES: 20556
29231/2/3

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

142/1 (29)

29th March, 1960.

W
Mr. Michael L. Lejeune,
Assistant Director of Operations
Europe, Africa & Australasia,
International Bank for Reconstruction
and Development,
1818 H Street, N.W.,
WASHINGTON 25, D.C.
U.S.A.

Dear Sir,

Loan IB 145 RN
List of Goods.

Thank you for your letter of March 22nd, in which you agree to the Loan Account being debited with the full amount of interest and other charges falling due on June 1st, 1960, on the understanding that to the extent that the amount allocated in the List of Goods to "Interest and Other Charges on the Loan" is exceeded, so will some other allocation to some other category be reduced.

I note that you do not require the List of Goods to be amended at this stage and that the necessary adjustments can be made after June 1st, 1960.

Yours faithfully,

WJSB

Chief Accountant

WJSB/DMJ

RECEIVED
BANK MAIL ROOM

1960 APR -4 PM 3:06

Handwritten initials: C.A.S.

Handwritten text, possibly a date or reference number: 1960 APR 4

Handwritten text, possibly a list or notes.

Handwritten text: 1960 APR 4

Handwritten text, possibly a list or notes.

Handwritten text: 1960 APR 4

Handwritten text: FEDERAL BOARD

FEDERAL POWER BOARD

Reliance House
Moffat Street
SALISBURY, S. Rhodesia

24th March, 1960

Dear Philip,

Thank you for your letter of the 14th March. I note that Mr. and Mrs. Aldewereld expect to arrive in Salisbury on the 13th May for the Opening Ceremony on the 17th. Sir Duncan mentioned this to Mr. R.M. Taylor, whom Mr. Aldewereld will remember as Financial Secretary to the Treasury at the time of the loan negotiations. Mr. Taylor said he would like very much to have Mr. and Mrs. Aldewereld stay with him while in Salisbury and that he hoped to be able to arrange for a visit to a game reserve, during this period. Perhaps you would pass this invitation on to Mr. and Mrs. Aldewereld and let them know that Mr. Taylor's address is:-

Mr. R.M. Taylor,
Richard Costain (Africa) Limited,
P.O. Box 2119,
Salisbury, Southern Rhodesia. Telegraphic
address:-
"Cosdown"

so that they may be able to reply and to let Mr. Taylor know their flight number.

I would myself have liked to have entertained the Aldewerelds but unfortunately, I expect to have to be at Kariba that weekend, in connection with the final arrangements for the opening ceremony.

I am glad to be able to confirm that we have been able to find a place for Mrs. Aldewereld at the opening ceremony and an invitation has already been despatched.

Yours sincerely,

(Sgd.) George Peterson

Philip J. Squire, Esq.,
International Bank for Reconstruction and Development,
1818 H Street, N.W.
Washington 25, D.C.
U.S.A.

GRP/DA/ism

Ans. Arrived 6/60

AIRMAIL

March 23, 1960

Secretary
Federal Power Board
P.O. Box 630
Salisbury, S. Rhodesia

Dear Sir:

Re: Loan 145-RN - Kariba Project

✓ This will acknowledge receipt of your two letters of February 3, No. P.6(156) and No. S.11(200), enclosing copies of contracts for Power Station Control and Indicating Equipment, Contract No. P.6 and for 88 kV, 33 kV and 11 kV Cables, Auxiliary Cables and Accessories, Contract No.S.11.

These contracts will be forwarded to our Treasurer's Department for its files.

Sincerely yours,

A. D. Spottswood
Chief, Public Utilities Division
Department of Technical Operations

ADS:bl1

cc: Messrs. Parsons/Calika
Verheyen (with contracts)

79 RN-N-145

March 22, 1960

The Secretary
Federal Power Board
Reliance House
Moffat Street
Salisbury, Southern Rhodesia

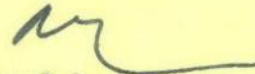
Dear Sir:

Loan 145 RN

I refer to Mr. Bosworth's letter of March 7, reference 142/1 (26). ✓

We are agreeable to debiting the Loan Account with the full amount of interest and other charges falling due on June 1, 1960, on the understanding that to the extent that the amount allocated in the List of Goods to "Interest and Other Charges on the Loan" is exceeded, so will some other allocation to some other category be reduced. We do not, however, propose to amend the List of Goods at this stage. The necessary adjustments among the categories would be made at a future date.

Yours sincerely,



Michael L. Lejeune
Assistant Director of Operations
Europe, Africa and Australasia

cc.: Messrs. Parsons
Piccagli/Wenzell
Verheyen
Bateson



JFajans:MLLejeune:re

The subject matter was discussed and cleared with the Working Party.

March 11, 1960

George R. Peterson, Esq.,
Deputy Chairman
Federal Power Board
Reliance House
Moffat Square
Salisbury, S. Rhodesia

Dear George:

Many thanks for your letter advising us that Mr. Black will not be expected to make a speech at the opening ceremony and that six invitations will be coming to us.

One of these will of course be for Siem Aldewereld, the Director of this Department, who with Mrs. Aldewereld will be accompanying Mr. Black on his tour, with the exception of the three days immediately preceding your opening ceremony which Mr. and Mrs. Black will spend with friends in Kenya. The Aldewerelds would like to spend these three days in Southern Rhodesia, arriving in Salisbury on 13th May, and I would very much appreciate it if you could book their hotel accommodation and arrange some sort of programme for them. The sort of thing I have in mind is that they could perhaps visit your Game Park (Siem has a super camera with a telephoto lens) or possibly you could arrange to fly them to Victoria Falls. I am sure they would be grateful for anything you could arrange of this sort. Perhaps you would drop him a line on this in due course.

When I cabled Sir Duncan I did not of course know that Mrs. Aldewereld would be accompanying Siem but they fully understand your problem of space shortage and that Mrs. Aldewereld will probably not be able to attend.

With kind regards to you both.

Yours sincerely,

ROUTING SLIP

Date

March 17, 1960

NAME

ROOM NO.

Mr. Wenzell

304

Mr. Feynoff

817

Action

Note and File

Appropriate Disposition

Note and Return

Approval

Prepare Reply

Comment

Per Our Conversation

Full Report

Recommendation

Information

Signature

Initial

To Handle

REMARKS

I would be grateful for your reaction.
In view of our letter of November 17
(third paragraph) I would accept
Mr. Bosworth's proposal.

JF.
for working party
5/17/60

From

Joseph Fajans

7 of R+NW45

FEDERAL POWER BOARD

(ESTABLISHED UNDER THE ELECTRICITY ACT, 1956)

P.O. Box 630

TELEPHONES: 25958
20556
29231/2,3

TELEGRAMS: "HYDRO"
SALISBURY

ALL COMMUNICATIONS SHOULD BE ADDRESSED
TO THE SECRETARY AND THE FOLLOWING
REFERENCE NUMBER QUOTED:

142/1 (26)

RELIANCE HOUSE,
MOFFAT STREET,
SALISBURY,
S. RHODESIA.

7th March, 1960.

Mr. Michael L. Lejeune,
Department of Operations
Europe, Africa & Australasia,
International Bank for Reconstruction
& Development,
1818 H Street, N.W.,
WASHINGTON, 25, D.C.
U.S.A.

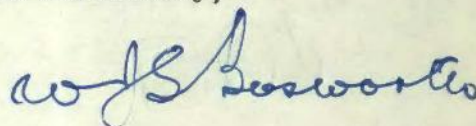
Dear Sir,

Loan IB 145 RN
List of Goods.

The present balance on the category "Interest and Other Charges on the Loan" expressed in U.S. Dollars is \$1,556,688.95, which will be insufficient to meet the whole of the charges due June 1, 1960. Depending on withdrawals made between now and June 1, the shortfall may be of the order of \$150,000.

In view of your letter of November 17, 1959, I shall be grateful if you will let me know if the Bank would agree to the category being exceeded by an amount sufficient to allow the whole of the charges due June 1, 1960, to be withdrawn from the loan, on the understanding that another category is reduced by the amount of the excess. Otherwise it will be necessary to make arrangements for the excess to be remitted to the Bank on June 1, 1960.

Yours faithfully,



Chief Accountant

cc W. J. S. B. Swortley

WJSB/DMJ

22. March 22/60

RW-6145

TO: HYDRO SALISBURY

DATE: MARCH 7, 1960

CLASS OF
SERVICE: NLT

COUNTRY: (SOUTHERN RHODESIA)

RWA

TEXT:
Cable No.:

✓
URCABLE 826 TRUST YOU HAVE NOW RECEIVED
MYLETTER MARCH TWO
✓

LEJEUNE

INTBAFRAD

NOT TO BE TRANSMITTED

MESSAGE AUTHORIZED BY:

NAME Michael L. Lejeune

DEPT. Operations, EAA

SIGNATURE

[Signature]
(SIGNATURE OF INDIVIDUAL AUTHORIZED TO APPROVE)

Assistant Director of Operations

CLEARANCES AND COPY DISTRIBUTION:

For Use by Archives Division

ORIGINAL (File Copy)

JF (IMPORTANT: See back of yellow copy for guide in preparing form)

Checked for Dispatch: _____

OUTGOING WIRE

TO: HYDRO SALISBURY

DATE: MARCH 7, 1960

CLASS OF
SERVICE: M.T.

COUNTRY: (SOUTHERN RHODESIA)

TEXT:
Cable No.:

Handwritten signature

URGABLE 826 TRUST YOU HAVE NOW RECEIVED

LETTER MARCH TWO

LEBUNG
IMBARD

MAR 7 5 28 PM 1960

DISPATCHED
GENERAL FILES
CORRESPONDENCE

NOT TO BE TRANSMITTED

CLEARANCES AND COPY DISTRIBUTION:

MESSAGE AUTHORIZED BY:

NAME Michael J. Lejans

DEPT. Operations, BAA

Handwritten signature

SIGNATURE

Assistant Director of Operations

ORIGINAL (file copy)

For Use by Archives Division

Checked for Dispatch:

(IMPORTANT: See back of yellow copy for guide in preparing form)

Handwritten initials

RN-145

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT	INCOMING WIRE	INTERNATIONAL FINANCE CORPORATION
--	---------------	--------------------------------------

DATE OF
WIRE:

LOG NO.:

MARCH 4, 1960 rc9

TO:

IBRD

FROM:

SALISBURYSR

TEXT:

ROUTING	
ACTION COPY:	
INFORMATION COPY:	TECH OP
DECODED BY:	

No. 828 FOR SQUIRE STOP ACCOMMODATION AT OPENING CEREMONY FOR SIX
RESERVED AS REQUESTED YOUR CABLE 16th FEBRUARY

HYDRO

TYPED

GENERAL FILES
CORRESPONDENCE

MAR 7 10 12 AM 1960



RECEIVED BY [illegible] ON [illegible] AT [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

SEARCHED	INDEXED
SERIALIZED	FILED
MAR 7 1960	
FBI - [illegible]	

RN-145

INCOMING WIRE

RC 12

MARCH 4, 19 60

DATE OF WIRE:

IBRD

TO:

FROM:

SALISBURYSR

TEXT:

ROUTING	
ACTION COPY TO	Mr. Parsons / Mr. Hagan MR. CALIKA
INFORMATION COPY TO	
Decoded By	

← Jan. 21/60

NUMBER 826 MY LETTER 500/3(82) STOP LOAN TO SALISBURY FOR REMOVAL OPERATING
RESTRICTIONS STOP GRATEFUL TO KNOW IF BANK HAS ANY OBJECTION

HYDRO SALISBURY

ORIGINAL
TYPED

GENERAL FILES
CORRESPONDENCE

MAR 7 10 15 AM 1960



MILWAUKEE SWITZERLAND

RECEIVED BY SWITZERLAND TO KNOW IF BANK HAS ANY OBLIGATION

NUMBER ONE IN PAPER NO. 3 (35) FROM TOVA TO SWITZERLAND FOR BANCART OBSERVING

TEXT

SWITZERLAND

SHOW

TO

IBKD

DATE OF INFO

MARCH 7 TO 10

30 TS

SEARCHED	INDEXED
SERIALIZED	FILED
MAR 10 1960	
FBI - MILWAUKEE	

INCOMING MAIL

INTERNATIONAL FINANCE CORPORATION

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

8/1

March 2, 1960

Mr. H.A. Cochran
Controller of Operations
Colonial Development Corporation
33 Hill Street
London W1
England

Dear Mr. Cochran:

Kariba Loan

Thank you for your letters of January 26 and February 22 informing the Bank that the Colonial Development Corporation has no objection to the Federal Power Board accepting a £250,000 loan from the Federal Government for relending to the Salisbury Municipality.

I now enclose a copy of a letter which I addressed to the Federal Power Board today.

Yours sincerely,

Michael L. Lejeune
Assistant Director of Operations
Europe, Africa and Australasia

Encl.

cc.: Messrs. Parsons/Calika
Piccagli
Verheyen
Bateson

H.

JFajans:re

March 2, 1960

Sir Duncan Anderson, K.B.E.
Chairman
Federal Power Board
Reliance House
Moffat Street
Salisbury
Southern Rhodesia

Dear Sir Duncan:

Kariba Loan

I am sorry that we have been so slow in answering your letter of January 21, reference 500/3 (82) on the proposed Federal Government loan for the Salisbury Municipality Electricity Undertaking.

We have taken note of the decision by the Federal Minister of Finance that the loan should be made to the Federal Power Board for relending to the Salisbury Municipality and I wish to inform you now that we have no objection to the Federal Power Board concluding the proposed £250,000 loan with the Federal Government, so long as its terms and conditions are not inconsistent with the provisions of the Loan Agreement of June 21, 1956 between the Bank and the Board.


I am sending copies of this letter to the Colonial Development Corporation and the Commonwealth Development Finance Company.

With best regards,

Yours sincerely,

cc.: Messrs. Cochran
Samways
Parsons/Calika
Piccagli
Verheyen
Bateson

Michael L. Lejeune
Assistant Director of Operations
Europe, Africa and Australasia

 Cleared with Mr. Bateson
JFajans:re

March 2, 1960

Mr. G. S. Samways
Commonwealth Development Finance
Company Limited
27-32 Old Jewry
London E.C.2
England

Dear Mr. Samways:

Kariba Loan

Thank you for your letter of January 27 on the proposed £250,000 borrowing by the Federal Power Board from the Federal Government.

I have now written to the Federal Power Board giving the Bank's position and I enclose a copy of my letter.

Best regards,

Yours sincerely,

Michael L. Lejeune
Assistant Director of Operations
Europe, Africa and Australasia

cc.: Messrs. Parsons/Calika
Piccagli
Verheyen
Bateson

Encl.

JFajans:re

March 1, 1960

The Secretary
Federal Power Board
P.O. Box 630
Salisbury
Rhodesia

Dear Sir,

This is to acknowledge receipt of Contracts S5(250) and S7(73), for which we thank you. We are passing these contracts to our Treasurers Department for their Contract file.

Sincerely yours,

Mario Piccagli
Asst. Chief, Public Utilities Division
Department of Technical Operations

MPiccagli:ab
Distribution:
Parsons)
Fajans) Area
Verheyen Treas.