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KODAK Gray Scale



Kodak
LICENSED PRODUCT

A 1 2 3 4 5 6 **M** 8 9 10 11 12 13 14 15 **B** 17 18 19



United States Senate

WASHINGTON, D. C.

In Senate, Aug. 11, 1926.

My dear Jack:

Edward Lowry's son is desirous of obtaining some employment on one of the round-the-world vessels which ultimately reaches or comes near London, in order that he may join his parents there. They leave here in July to be in Europe a year. He is to be in England in September, having won a Rhodes scholarship. All this is preliminary to asking what ship Bill made his famous trip on, who controls the line, and how often the ships leave on their excursions. I think a great deal of the Lowrys, and if Stanley Dollar is manager of the excursions, I thought in view of the favors I have done for him, I might with propriety prefer the request of him to give young Lowry a job by which he might work his way around the world.

Your good letter was received. The

Whippet and the Bull dog will give you
an animal family akin to ours. They'll
get under your skin like the little doggies
do with us. These pecks of Morken are
the dearest puppies I ever saw - sweet in
disposition, never unruly, and always affectionate.


We've had one big snow storm. Looking
from our back door the scene is like
a painting of winter. Indeed, the view
is the one enjoyable and beautiful part of
the snow. In it, there's no fun for an
old fellow.

Love to the Kiddies and yourself.

Affectionately,
Dad.

CLASS OF SERVICE	SYMBOL
Telegram	
Day Letter	Blue
Night Message	Nite
Night Letter	N L
If none of these three symbols appears after the check (number of words) this is a telegram. Otherwise its character is indicated by the symbol appearing after the check.	

WESTERN UNION



TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

CLASS OF SERVICE	SYMBOL
Telegram	
Day Letter	Blue
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The filing time as shown in the date line on full rate telegrams and day letters, and the time of receipt at destination as shown on all messages, is STANDARD TIME.

RECEIVED AT 722 MARKET STREET, SAN FRANCISCO, CALIF.

ALWAYS
OPEN

1926 FEB 3 PM 1 28

AB35 48 BLUE

SN WASHINGTON DC 3 243P

HIRAM W AND ARCHIBALD M JOHNSON

3752 BLDG SANFRANCISCO CALIF

THANK YOU VERY MUCH FOR YOUR WIRES WHATEVER OUGHT TO BE DONE
I KNOW YOU TWO WILL DO THOUGH AGE AND SICKNESS MADE ME REALIZE ITS NEAR
APPROACH THE END HAS LEFT ME SHOCKED CONFUSED AND NUMB C K MCCLATCHY
AND JOHN ING HAVE BEEN VERY KIND LOVE
HIRAM W JOHNSON.

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1928 FEB 8 AM 9 16

AA236 12

SN WASHINGTON DC 8 1149A

HIRAM W JOHNSON JR

2059

K

ATTORNEY AT LAW MILLS BLDG SANFRANCISCO CAL IF

PLEASE SELL ONE ONE THOUSAND DOLLAR LIBERTY BOND AND SEND

ME PROCEEDS

HIRAM W JOHNSON.

CLASS OF SERVICE	SYMBOL
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Night Letter	N L
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ALWAYS
OPEN

1926 FEB 9 AM 7 42

AA163 8 SN WASHINGTON DC 9 1031A

HIRAM W JOHNSON JR

1870

ATTORNEY AT LAW MILLS BLDG SANFRANCISCO CALIF

RECEIVED BOND PROCEEDS MANY THANKS PROMPT ATTENTION LOVE

HIRAM W JOHNSON.

Telegram	
Day Letter	Blue
Night Message	Nite
Night Letter	N L

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GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

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RECEIVED AT 722 MARKET STREET, SAN FRANCISCO, CALIF. ALWAYS OPEN

1926 FEB 17 PM 1 01

AA447 31

SN WASHINGTON DC 17 335P

HIRAM W JOHNSON JR

MILLS BLDG SANFRANCISCO CALIF

HAVE JUST RECEIVED WIRE FROM MARTHA THAT ARCH HAS PNEUMONIA WITH
TEMPERATURE ONE HUNDRED FIVE WE ARE GREATLY WORRIED PLEASE WIRE
EXACT SITUATION HAS ARCH MOVED WHERE WE CAN TELEGRAPH MARTHA
DAD AND MOTHER.

CLASS OF SERVICE	SYMBOL
Telegram	
Day Letter	Blue
Night Message	Nite
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TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

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RECEIVED AT 722 MARKET STREET, SAN FRANCISCO, CALIF.

ALWAYS
OPEN

1926 FEB 18 AM 10 54

SB232 53

SN WASHINGTON DC 18 1211P

HIRAM W JOHNSON JR

2669

MILLS BLDG SANFRANCISCO CALIF

WE ARE CONFINED HERE BECAUSE OF ILLNESS AND CAN THINK OF NOTHING
BUT ARCHS CONDITION THANK YOU SO MUCH FOR WIRE OF MIDNIGHT
SITUATION EVERY SCRAP OF NEWS IS EAGERLY AWAITED WE ARE REALLY
LIVING FROM ONE WIRE TO ANOTHER WE ARE SO GRATEFUL FOR YOUR
KINDNESS ALL LOVE TO OUR DEAR BOY

HIRAM W JOHNSON.

CLASS OF SERVICE	SYMBOL
TELEGRAM	
DAY LETTER	BLUE
NIGHT MESSAGE	NITE
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NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

The filing time as shown in the date line on full-rate telegrams and day letters, and the time of receipt at destination as shown on all messages, is STANDARD TIME.

Received at 1448 VAN NESS AVE.

A418F EZ 15 SUTTER 4321 LOCAL 106

WASHINGTON DC 1023P FEB 18 1926

HIRAM W JOHNSON JR

973 GREEN ST SANFRANCISCO CALIF

WE ARE SO GRATEFUL FOR YOUR WIRES AND SO RELIEVED
AT THEIR GOOD NEWS LOVE


HIRAM W JOHNSON

750P

CLASS OF SERVICE	SYMBOL
TELEGRAM	
DAY LETTER	BLUE
NIGHT MESSAGE	NITE
NIGHT LETTER	N L

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TELEGRAM

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NIGHT MESSAGE	NITE
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NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

The filing time as shown in the date line on full-rate telegrams and day letters, and the time of receipt at destination as shown on all messages, is STANDARD TIME.

Received at

A419F EZ 10

1448 VAN NESS AVE.
SUTTER 4321 LOCAL 106

WASHINGTON DC 948P FEB 19 1926

HIRAM W JOHNSON

973 GREEN ST SANFRANCISCO CALIF

HAPPY OVER GOOD NEWS ARCH MANY THANKS TO YOU LOVE

HIRAM W JOHNSON

755P

United States Senate,

WASHINGTON, D. C.

At Home, Saturday, July 20, 1926.
My dear Mike,

The event of the week, of course, has been Arthur's sickness. It might not have been such a thunderbolt but for our situation here. This is the tenth day I've been at home. The first I was sitting up was when the news came. You were very good to wire us as you did, and I never can tell you the relief we felt, the real thanksgiving, when the news came of the lad's improvement. I don't quite understand yet his sickness. It could scarcely have been pneumonia, I imagine, but whatever it was, the temperature was enough to frighten anybody. How small everything seems when we contemplate a serious or critical illness! Pneumonia is epidemic here at present — 28 new cases in Washington yesterday with 6 deaths. I've been fighting it off, I think successfully; and with the slight congestion disappearing and temperature getting normal, I hope next week to return to the Senate.

We've been having some other troubles, too,

but little have we cared for them with
tread impending sickness.

I wanted today merely while sitting up in
a comfortable lounge chair, to write you
that all was well with us again, and to
thank you for your kindness and attention
this week.

Love to the Madams. Lots to yourself.

Affectionately,

Dad.

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ANSWER
IS EXPECTED

by the sender
of this message.
Please give it to
the messenger
or telephone it
to

WESTERN UNION

W N UNION

GRAM

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

CLASS OF SERVICE	SYMBOL
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The filling time as shown in the date line on front of this message is STANDARD TIME.
RECEIVED AT 722 MARKET ST

the time of receipt at destination as shown on all messages, is STANDARD TIME.
CO, CALIF. ALWAYS OPEN

1926 MAR 13 AM 11 15

DB234 9

SN WASHINGTON DC 13 147P

HIRAM W JOHNSON JR

3109

14

ATTY AT LAW MILLS BLDG SANFRANCISCO CALIF
MOTHER GREATLY WORRIED ABOUT ARCH PLEASE WIRE HER LOVE

DAD

CLASS OF SERVICE	SYMBOL
Telegram	
Day Letter	Blue
Night Message	Nite
Night Letter	N L
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WESTERN UNION

AN ANSWER IS EXPECTED

by the sender of this message. Please give it to the messenger or telephone it to

GRAM

NEWCOMB CALIF. GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

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RECEIVED AT 722 MARKET STREET

WESTERN UNION

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CALIF. ALWAYS OPEN

1926 MAR 15 PM 12 59

AA451 6

SN WASHINGTON DC 15 337P

HIRAM W JOHNSON JR

3589

MILLS BLDG SANFRANCISCO CALIF


PLEASE WIRE ARCHIES CONDITION TODAY LOVE

HIRAM W JOHNSON.

CLASS OF SERVICE	SYMBOL
Telegram	
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RECEIVED AT 722 MARKET STREET, SAN FRANCISCO, CALIF. ALWAYS OPEN

1926 MAR 19 AM 7 00

DB65 6

SN WASHINGTON DC 19 952A

HIRAM W JOHNSON JR 1685

MILLS BLDG SANFRANCISCO CALIF

PLEASE WIRE ARCHIES PRESENT CONDITION LOVE

HIRAM W JOHNSON.

CLASS OF SERVICE SYMBOL

HIRAM W. JOHNSON, CALIF., CHAIRMAN
HENRY W. KEYES, N. H. WILLIAM H. KING, UTAH
FRANK B. WILLIS, OHIO WILLIAM J. HARRIS, GA.
DAVID A. REED, PA. PAT HARRISON, MISS.
RICE W. MEANS, COLO. ROYAL S. COPELAND, N. Y.
HIRAM BINGHAM, CONN. COLE L. BLEASE, S. C.

United States Senate

COMMITTEE ON IMMIGRATION

March 29, 1926

Dear Jack:

I am just starting home and wanted to send you this note, which I had intended to add to my last letter, so please pardon the typewritten note.

If you remember, last year, Mr. Schwerin was good enough to arrange with the Radio Corporation, or some such corporation, to send me out one of their wonderful radiolas. To me it was a great source of joy, and I enjoyed it more than I can tell you. When we reached home last summer, after our long trip with you, your father received a letter from one of the heads of the company, the president, I think, saying he understood we had one of the radios, and saying he hoped we were enjoying it. Your father, without saying anything to me at all, wrote the president thanking him, and then sent word to the radio corporation of America to send for it. I suppose he did it because he thought there might be a "bug" in the letter from the president. Nevertheless, it is done, and I am minus my fun. Now, what I want to know is this: Do you suppose Mr. Schwerin could get any substantial discount on one for me. I inquired today and find that the price is \$295.00. Don't do it if it will embarrass you in any way, but I thought sometime when you were talking to him, you might ask him. My little local radio is most inadequate and a nuisance more than a pleasure.

I am sending a few gifts for the kiddies for their Easter breakfast. I hope they reach them on time.

Much love to you and the kiddies, in haste,

Devotedly,

Mother

HIRAM W. JOHNSON, CALIF., CHAIRMAN
HENRY W. KEYES, N. H. WILLIAM H. KING, UTAH
FRANK B. WILLIS, OHIO WILLIAM J. HARRIS, GA.
DAVID A. REED, PA. PAT HARRISON, MISS.
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HIRAM BINGHAM, CONN. COLE L. BLEASE, S. C.

United States Senate

COMMITTEE ON IMMIGRATION

April 10, 1926

Mr. Hiram W. Johnson, Jr.,
Attorney at law,
Mills Building,
San Francisco, California

My dear Jack:

As you know, your Mother has a title to an undivided half of certain acreage in Los Angeles County near Redondo. Last year we received from the Shell Oil Co. \$3254.00, and thereafter paid \$750.00 on account of interest and taxes, which is deductible, as I understand it, from this sum. On another occasion, some years ago, a certain sum was received from this property, the amount of which I have forgotten. I have written about this latter transaction to Lissner today, to get the exact data. I neglected wholly to file an income tax return for your Mother, and it never occurred to me to include this sum in my own income tax return. I am ashamed of my dereliction. I want to correct it at the earliest possible moment, and I don't know just exactly how to go about it. I will have, within a short time, the detail concerning the earlier transaction, while the latter one is as I state above. I will send you the data of the ^{earlier} ~~latter~~ just as soon as I get it, and I am going to ask you then to file such return as may be essential in your Mother's name, which I presume is the appropriate thing to do, or if it should be necessary, to add to my own previously filed statements, and advise me as to the method of procedure.

Mr. Hiram W. Johnson, Jr., - 2

I am writing you of the facts now, so that we may do
whatever is essential to pay our just dues to the Government.

With love to the kiddies and yourself,

Affectionately,

dad

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WESTERN UNION



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AA671 10

WASHINGTON DC 12 717P

MAJOR ARCHIBALD M JOHNSON 4216

ATTORNEY AT LAW MILLS BLDG SANFRANCISCO CALIF

SO SORRY ABOUT SPREAD EAGLE BOTH SEND LOVE BOTH YOU

HIRAM W JOHNSON.

1926 APR 12 PM 4 32

168
188
8
8
30
5

407

Calendar No. 666

69TH CONGRESS }
1st Session }

SENATE

{ REPT. 654,
Part 1 }

BOULDER CANYON RECLAMATION PROJECT

APRIL 19 (calendar day, APRIL 24), 1926.—Ordered to be printed

Mr. JOHNSON, from the Committee on Irrigation and Reclamation,
submitted the following

REPORT

[To accompany S. 3331]

The Committee on Irrigation and Reclamation, to whom was referred the bill S. 3331, presents the following report recommending the passage of S. 3331:

PLAN OF REPORT

The plan of the report is as follows:

Part I: Generally of the project, its development and plan.

Part II: Flood control and river regulation.

Part III: Reclamation and all-American canal.

Part IV: Domestic water.

Part V: Power.

Part VI: Financial soundness of project.

Part VII: Analysis of bill.

THE PROJECT GENERALLY

Senate bill 3331, reported favorably by the Committee on Irrigation and Reclamation, is the culmination of many years of technical and scientific research, study, and investigation, and of the efforts of the Federal Government and the various States affected to harness the waters of one of the great rivers of the world. The Colorado River is a unique stream of 1,750 miles in length, the third largest river on the continent. Its drainage area embraces 242,000 square miles in the United States. It rises in the State of Wyoming, and flows through that State, Colorado, Utah, and Arizona, and forms part of the boundary between the States of Arizona and Nevada and Arizona and California, and finally discharges into the Gulf of California.

The stream measurements taken over a period of 25 years show an average annual discharge of nearly 17,000,000 acre-feet (this after irrigation depletion above). The run-off varies greatly from year to year. In 1902 it was but 9,110,000 acre-feet. In 1909 it was 25,400,000 acre-feet. The seasonal variation of the river is also sharply marked, the flow ranging from 200,000 cubic feet per second when in flood to as low as 1,250 in low water. The rim of the upper drainage basin of the river is composed largely of high mountain ranges. The melting snows from these ranges and the rainfall increase its volume. The lower portion of the basin is composed of hot arid plains of low altitude broken by short mountain groups. The central portion consists of a high plateau, through which the river runs for hundreds of miles in a deep and narrow canyon.

As the river flows rapidly through the canyon region, it picks up a tremendous amount of silt; and its average discharge of silt yearly, at Yuma, is about 110,000 acre-feet, an amount equal in volume to the total excavations by the United States from the Panama Canal.

In its quieter moods the waters of the Colorado River are easily controlled and may be beneficially utilized in the fertile valleys it traverses; but as summer approaches, the melting snows often convert this stream into an indescribable raging torrent, which, through the ages, with irresistible force has torn into the high plateaus of Arizona and Nevada and carved out mighty chasms, sometimes even to a depth of 5,000 feet.

The havoc that the river at its flood has wrought, its very destruction of the territory through which its torrents have swept all before it, have provided the means for its control and for the beneficial use of its waters now running to waste. Through great deposits of rock the waters have cut, leaving towering perpendicular walls between which dams may be constructed at a minimum of effort and expense. Immense basins have been carved out where its waters can be easily stored. It has distributed the material carried down by its floods over the low lying lands in the valleys below, converting the otherwise barren and worthless desert into highly productive and fertile soil. A menacing and destructive agency in its natural state, the Colorado River but awaits development and control to be one of the great contributing factors to the wealth of the Nation and the happiness of the people of all of the territory of the Southwest. Successive administrations have recognized not only the possibilities of regulation and control of the Colorado River but the necessity for that regulation and control. From the time of President Roosevelt to that of President Coolidge, the Federal Government has recognized the problems of the Colorado River and the lands dependent upon it, and that these problems because of their interstate relations and certain of their international aspects were national in character and a matter of national concern. The present bill embodies the conceded solution of years of painstaking care and thorough study and investigation by the ablest engineers of our country. It seeks not only the control of one of the Nation's great rivers, but endeavors to remove the danger and the menace which like a pall has rested upon tens of thousands of American citizens, utilizes what is now waste water for reclamation, irrigation, and domestic use, and ends the intolerable conditions now surrounding the Imperial Valley in its water supply.

The citizens in the Imperial Valley and the territory contiguous thereto have long been praying the Congress for relief from the perilous position in which the Colorado River in its erratic moods has placed them. Imperial County is the southeasterly county of the State of California. It borders upon Mexico. In its conformation physically it is different from any other part of our country, and possibly different from any other part of any other country in the world. The fertile valley which takes its name from that of the county is in shape like a saucer. Along the rim of a part of this saucer-shaped land flows the turbulent Colorado River. Beneath is the valley, 250 feet below the level of the sea. The rainfall is negligible and the wells are in one restricted locality and are of little consequence. It is a natural desert composed of silt from the river that flows above it and which, during the ages, has reclaimed the sea. For the Imperial Valley at one time undoubtedly was a part of the Gulf of California, which gradually has been filled by this silt deposit of the Colorado River. The silt constitutes a sand, originally variable and moving and in its natural state merely a forbidding desert.

One thing, and one thing alone, makes the Imperial Valley possible for productivity and habitation. One thing transforms a hideous desert into a modern paradise, and that one thing is water. From one place, and one place alone, can water be obtained, and that place is the Colorado River. The Colorado is an American stream. It has its source in the United States, as has been related. It is true that it meanders through Mexico and finally finds its outlet in the Gulf of California. But it is an American river, and it is an American river to which Americans in America are entitled first. Each season because of the silt it carries its bed rises higher. It is restrained and controlled by dykes and levees. The height of these levees has been constantly increased until to-day they are built to the danger point and can not be built higher.

Storage above and the regulation of the flow are now recognized as the only means of protection from floods, not only for the Imperial Valley but for a part of Arizona, a part which by reason of its development has become a productive, valuable, and beautiful territory. The flood danger so far as the Imperial Valley is concerned is unlike that which exists in any other part of the United States. In other localities destructive floods may occur with untold losses, and yet the waters subside and the territory affected ultimately recover. In the Imperial Valley floods mean water entering the basin of the saucer-shaped land with no possible outlet and then utter annihilation. Millions of dollars have already been expended, not only by the localities affected but by the Federal Government in the attempt to protect the lower basin of the Colorado River from floods. Levees at times have no sooner been built than they have been washed away. Here finally is presented a unified plan for protecting those entitled to protection, for the allocation among the States desiring that allocation of the waters of a great river to which all are entitled, for the eliminating of intolerable conditions by which a fertile and productive part of the United States is dependent for its very life upon water which flows through Mexican territory, and finally for converting into a great national asset a wasteful and destructive agency, and by its control

reclaiming for homes for Americans hundreds of thousands of acres of land now arid and worthless.

The project contemplates the construction of a large dam and storage reservoir at Boulder or Black Canyon where the Colorado in its mad moments has prepared a precipitous perpendicular granite or basalt wall more than 1,600 feet in height. In addition, an all-American canal for the protection of the lands of Imperial and Coachella Valleys is provided for. The canal will extend from the Laguna Dam near Yuma to Imperial Valley, a distance of about 60 miles. The dam will be approximately 550 feet in height and will create a water storage of 26,000,000 acre-feet. The dam will furnish sufficient drop to generate 550,000 firm horsepower of electricity or 1,000,000 horsepower on a 55 per cent load factor.

The magnitude of the proposed Boulder Canyon Dam can only be appreciated by comparison with present existing works of like character. The highest dams now in existence stand from 250 to 350 feet above bedrock, while the Boulder Canyon Dam will consist of a solid concrete structure towering 550 feet above its foundations and braced between solid rock walls. Some of the great reservoirs in the world are the Assuan, of Egypt, with 1,865,000 acre-feet capacity; the Elephant Butte, of New Mexico and our Reclamation Service, with 2,368,000 acre-feet capacity, and the Gatun Lake on the Panama Canal, with 4,410,000 capacity, while the proposed Boulder Canyon storage will have approximately 26,000,000 acre-feet. If we assume the District of Columbia as a reservoir site and use the total area of the District for the storage of an amount of water which will be stored by this project, the District would be covered to a depth of 535 feet or within 20 feet of the height of the Washington Monument. If the land alone of the District were thus utilized for the waters stored by the Boulder Dam, the water would be upon the District 677 feet deep or 120 feet higher than the Washington Monument. The hydro-electric power which will be generated from the contemplated new work will equal 550,000 firm horsepower continuously, with a 1,000,000 horsepower installed capacity—a capacity equal to the total capacity of all the Niagara plants now operating, an installed capacity 50 per cent greater than Muscle Shoals, and with a capacity and firm horsepower six times greater than that contemplated at Muscle Shoals. Careful estimates demonstrate that the Boulder Canyon project will save 23,000,000 barrels of oil yearly, and when it is recalled that the United States Geological Survey warns us that the oil supply of America at the present rate of consumption may be completely exhausted in 20 years, the importance of this saving can not be overestimated.

And at the beginning and at the end of this report it should be made plain that the entire project will finance itself; that the bill provides no work shall be undertaken and no money expended until the administration has provided for the adequate repayment of every penny that may be expended. The testimony demonstrates conclusively that the money for the work under this bill will be forthcoming, that already it may be provided, and that this tremendous enterprise, one of the greatest of our generation, fraught with such potential possibilities for good and with such incalculable benefit to our people, will cost the Federal Government nothing but administrative effort.

PART I. GENERALLY OF THE PROJECT, ITS DEVELOPMENT AND PLAN

PROJECT FINANCIALLY ATTRACTIVE TO GOVERNMENT

From a financial aspect this project is an attractive one to the Government. There is an active market for the power which will be generated at the dam both for commercial purposes and for pumping in connection with a domestic water supply for southern California cities. The Imperial Valley is a proven irrigable area. Established and going districts will be responsible for the cost of the canal. While the Government will in the first instance advance funds for the construction of the works, all advancements will be repaid to the Government within 50 years with interest at 4 per cent per annum. Moreover, the bill specifies that no money is to be advanced until the Secretary of the Interior has secured contracts for the delivery of water and for power assuring the Government full repayment of its outlays with interest.

The authorized appropriation is \$125,000,000, covering \$41,500,000, the estimated cost of the dam, \$31,000,000, the estimated cost of the canal \$31,500,000, the estimated cost of a power plant at the dam, and \$21,000,000 interest during construction. The last item, however, represents no active appropriation, but is solely for the purpose of returning to the General Treasury interest upon the other \$104,000,000 during the period of construction and before the works can begin to yield a return. It is largely a bookkeeping arrangement to fix the amount for which beneficiaries of the project will be charged.

Again, the building of a power plant at the dam is left optional with the Secretary of the Interior. If he elects not to build the plant, but instead to lease the rights to use waters for power generation, the \$104,000,000, representing the total cost of the works authorized, will be reduced to \$72,500,000 and the item of interest during construction will be correspondingly reduced.

FINANCIAL FEATURES OF BILL PREPARED BY TREASURY DEPARTMENT

Particular consideration has been paid to the financial features of the bill. As they appear they are in the form prepared by the Treasury Department and may therefore be said to be suitable and appropriate both to the carrying out of the project and to the requirements of that department.

PURPOSES OF PROJECT

The project will serve four main purposes:

(1) It will relieve a very serious and ever-present flood danger to the Imperial Valley as well as other sections along the lower river both in Arizona and California. Imperial Valley occupies a sink or basin lying from 100 to 350 feet below the bed of the river. It has no drainage outlet. Hence its flooding means its permanent destruction.

(2) It will end an intolerable situation, under which the Imperial Valley now secures its sole water supply from a canal running for many miles through Mexico, as well as make possible the reclamation

of a large area of public lands lying around the rim of the present cultivated section in the valley.

(3) It will conserve flood waters of the river which in addition to providing for irrigation development will make it possible for rapidly growing cities of southern California to secure a domestic water supply from the water thus saved.

(4) It will create a large amount of desirable hydroelectric power, making the project a financially feasible one.

The constriction of the dam in addition to providing efficient flood control and making available the flood waters for irrigation and domestic uses, will fully regulate the flow of the river. With its flow unregulated the river can not be successfully used as a highway for commerce; in its regulated form it will provide a safe and dependable flow below the dam that can be used by power boats and other small craft. The reservoir created by the dam will be the largest artificial lake in the United States and capable of successful navigation.

PROJECT HAS BEEN FULLY INVESTIGATED

The project has been under consideration for many years. Government agencies have made long and careful investigations respecting its feasibility and necessity. Unusually extensive committee hearings have been had.

The committee has actually visited the region affected by the project and held hearings there. Two years ago the Secretary of the Interior in a report to Congress on the project, tersely said:

The Colorado River has been under observation, survey and study, and the subject of reports to Congress since the close of the Civil War. More than \$350,000 have been expended by the Bureau of Reclamation since the Kinkaid Act of May 18, 1920. More than \$2,000,000 have been expended by other agencies of the Government. The time has arrived when the Government should decide whether it will proceed to convert this natural menace into a national resource. (Hearings on H. R. 2903, 68th Cong., 1st sess., p. 818.)

BOULDER (OR BLACK) CANYON PROPER LOCATION FOR DAM

While there has been some difference of opinion as to the proper site for an initial development on the Colorado River the overwhelming weight of opinion favors the Boulder or Black Canyon site. These two sites are close together and are frequently termed the upper and lower Boulder Canyon sites. A dam at either site will inundate practically the same territory. Natural conditions at this point are extremely favorable for the construction of a great dam at a minimum of cost. An immense natural reservoir site is here available. A development at this point will fully and adequately serve all purposes—flood control, reclamation, domestic water, and power. It is the nearest available site to the power market—an important element from a business or financial standpoint.

As said by Mr. Hoover, Secretary of Commerce:

I believe the largest group of those who have dealt with the problem, both engineers and business folk, have come to the conclusion that there should be a high dam erected somewhere in the vicinity of Black Canyon. That is known usually as the Boulder Canyon site, but nevertheless it is actually Black Canyon. The dam so erected is proposed to serve the triple purpose of power, flood control, and storage. Perhaps I should state them in a different order—flood control, storage, and power, as power is a by-product of these other works.

There are theoretical engineering reasons why flood control and storage works should be erected farther up the river and why storage works should be erected farther down the river; and I have not any doubt that given another century of development on the river all these things will be done. The problem that we have to consider, however, is what will serve the next generation in the most economical manner, and we must take capital expenditure and power markets into consideration in determining this. I can conceive the development of probably 15 different dams on the Colorado River, the securing of 6,000,000 or 7,000,000 horsepower; but the only place where there is an economic market for power to-day, at least of any consequence, is in southern California, the economical distance for the most of such dams being too remote for that market. No doubt markets will grow in time so as to warrant the construction of dams all up and down the river. We have to consider here the problem of financing; that in the erection of a dam—or of any works, for that matter—we must make such recovery as we can on the cost, and therefore we must find an immediate market for power. For that reason it seems to be that logic drives us as near to the power market as possible, and that it therefore takes us down into the lower canyon. (Hearings on S. Res. 320, 68th Cong., 2d sess., p. 601.)

FEDERAL GOVERNMENT THE PROPER AGENCY TO UNDERTAKE DEVELOPMENT

Because the Colorado River is an interstate and international stream and because of the various conflicting uses of water such as for flood control, reclamation and power generation, the Government is the proper and logical agency to undertake this development. It is well equipped for this purpose. The Reclamation Service has had wide experience in large dam construction. For the Government to undertake this work does not mean its going into business in an objectionable sense. Even if the Secretary of the Interior elects to build a power plant at the dam and operate it, this will mean but a very small force of men in the Government service. Again, the economic consequences of a development of this importance are such that the Government should maintain a control greater than can be secured through the usual regulatory processes. Benefits from natural assets of the magnitude here involved should be fairly and widely distributed. This can best be accomplished by the Government taking the initiative, as in the bill provided. This idea was well expressed by the Secretary of the Interior in his report of January 12, 1926, on the project, where he said:

Interstate and international rights and interests involved, the diversified benefits from the construction of these works, the waiting necessities of cities for increased water supplies, the large development of latent agricultural resources, the protection of those already developed, and the immense industrial benefits which may come from the production of cheap power, which together appear to render the construction and subsequent control of these works a measure of such economic and social importance that no agency but the Federal Government should be entrusted with the protection of rights or distribution of its opportunities. All uses can be coordinated and the fullest benefits realized only by their centralized control. (Hearings on S. Res. 320, 69th Cong., 1st sess., p. 868.)

A similar view was voiced by the President in a telegram to C. C. Teague, of date October 7, 1924, in which he said:

The major purposes of the works to be constructed * * * involve two fundamental questions which must always remain in public control—that is, flood control and the provision of immense water storage necessary to hold the seasonal and annual flow so as to provide for the large reclamation possibilities in both California and Arizona.

These considerations seem to me to dominate all others and to point logically to the Federal Government as the agency to undertake the construction of a great dam at Boulder Canyon or some other suitable locality * * *. (Hearings on S. 727, 68th Cong., 2d sess., p. 13.)

This thought was also clearly expressed by the late President Harding in the manuscript of an address which he expected to deliver at San Diego. He was prevented from delivering this address by death. He said:

Such a gigantic operation may not be accomplished within the resources of the local communities. It is my view, and I believe the accepted view of a large part of our people, that the initial capital for the installation of these engineering works must be provided by the American people as a whole, and truly the American people as a whole benefit from such investment. The additional to our national assets of so productive a unit benefits, not alone the local community created by it, but also, directly and indirectly, our entire national life. * * * I should, indeed, be proud if during my administration I could participate in the inauguration of this great project by affixing my signature to the proper legislation by Congress through which it might be launched. I should feel that I had some small part in the many thousands of fine American homes that would spring forth from the desert during the course of my lifetime as the result of such an act and in the extension of these fine foundations of our American people. (Hearings, H. R. 2903, 68th Cong., 1st sess., pp. 1884, 1885.)

HOW THE PROJECT TOOK FORM

As early as January 12, 1907, President Roosevelt submitted to Congress a message upon the problems of the lower Colorado River, in which he outlined and urged a development which will become a reality upon the completion of the project here authorized. Thus he said:

The construction work required would be: The main canal, some 60 miles in length, from Laguna Dam into the Imperial Valley; the repair and partial construction of the present distribution system in the valley and its extension to other lands, mainly public; diversion dams and distribution systems in the Colorado River Valley, and provision for supplementing the natural flow of the river by means of such storage reservoirs as may be necessary. This would provide for the complete irrigation of 300,000 acres in the Imperial Valley and for 400,000 acres additional in the United States in the valley of the Colorado in Arizona and California.

(Further investigations, of course, have shown that even President Roosevelt did not grasp the magnitude of irrigation possibilities in the lower Colorado.)

Proceeding in his message, he said:

The Imperial Valley will never have a safe and adequate supply of water until the main canal extends from the Laguna Dam. At each end this dam is connected with rock bluffs and provides a permanent heading founded on rock for the diversion of the water. Any works built below this point would not be safe from destruction by floods and can not be depended upon for a permanent and reliable supply of water to the valley.

On February 16, 1918, by contract between the Secretary of the Interior and the Imperial irrigation district provision was made for the creation of an all-American canal board to consist of one member named by the Reclamation Service, one by the district and one by the University of California, such board to investigate the feasibility of an all-American canal. The engineers selected were Dr. Elwood Mead, now Commissioner of Reclamation; W. W. Schlecht, and C. E. Grunsky.

This board reported on July 22, 1919, recommending an all-American canal; and legislation was presented in the Sixty-sixth Congress to carry out its recommendation. Extensive hearings were held. But Congress, not being entirely satisfied with the data

available, and particularly because no concrete plan for storage was before it, on May 18, 1920, passed the so-called Kinkaid Act, by which the Secretary of the Interior was directed to make further investigation of the problems of the lower Colorado and report back to Congress his recommendations as to the proper plan of development. An appropriation of \$20,000 was made. As investigations proceeded this was supplemented by appropriations from the Imperial irrigation district, Arizona, Los Angeles, Pasadena, and other interested communities, aggregating \$171,000.

A preliminary report was completed in the early part of 1921. Public hearings on this were had by the Secretary of the Interior, and on February 28, 1922, his formal report recommending in substance the project here authorized was transmitted to Congress. This report is published as Senate Document No. 142 of the Sixty-seventh Congress, second session.

Bills were introduced in both Houses to carry out the recommendations of the report, and hearings were had.

Passage of legislation (the forerunner of the present bill) was recommended by the Interior Department in a communication to the House Committee on Irrigation, on June 14, 1922. (Hearings on H. R. 11449, 67th Cong., 2d sess., p. 4.)

It was again urged by the department in a communication to the House committee on March 17, 1924. (Hearings on H. R. 2903, 68th Cong., 1st sess., p. 818.)

The project was favorably reported on by engineers of the Reclamation Service in February, 1924, in a voluminous report which has been before this committee and considered by it, but which has not been published. This report contains a wealth of technical data on irrigable areas, various plans of development of the river, cost estimates, and similar data.

On January 12, 1926, the Interior Department again recommended the project in a report to which reference is herein frequently made. (Hearings on S. Res. 320, 69th Cong., 1st sess., p. 867.)

The financial plan contained in the bill has been approved by the Secretary of the Treasury. (Report to House committee.)

This summary, by no means complete, of the various reports and recommendations upon this project, indicates the great care and long study which it has received from various Government departments and agencies and from congressional committees. It is as a result of all these that the project has taken its present form.

COLORADO RIVER COMPACT

About the time the Interior Department reported to Congress pursuant to the Kinkaid Act there was launched a plan to settle water rights on the Colorado River by interstate agreement. The efforts made to consummate such an agreement and the differences and disputes growing out of it have played an important part in the consideration of the project by Congress. Much of the testimony presented before the various committees have had to do with this.

Briefly, a seven-State agreement was signed by representatives of the interested States at Santa Fe, N. Mex., on November 24, 1922. All the States except Arizona promptly ratified this compact. Ari-

zona, however, has thus far refused to ratify and no assurances have been forthcoming that it will ratify in the immediate future.

In 1925, a six-State ratification of this compact was suggested and the four upper-basin States and the State of Nevada in the lower basin made such a ratification. California consented to the six-State ratification, but made its ratification contingent upon large storage being authorized.

Out of a wealth of discussion and argument over the situation thus created there has been evolved, and the bill contains, a formula or plan by which the present legislation shall become effective only upon a definite and unconditional six-State ratification of this compact being made, supplemented by various protective devices contained in the bill and suggested largely by representatives of upper-basin States. The bill gives congressional approval to a six-State as well as a seven-State ratification of this compact.

This arrangement or plan is objected to by certain groups in the State of Arizona, but the committee has felt that in view of the somewhat uncertain conditions in that State and in view of the urgent necessity for flood relief in the Lower Colorado, development should not be allowed to further await action by Arizona.

As said by Mr. Hoover in testifying before the House committee on March 3, 1926, in favor of the prompt authorization of this project:

I have felt that the public interest of the people involved is so great that the whole of this enormous work should not be held up because of this last remaining fraction of opposition.

Under the provisions of the bill Arizona may use waters conserved by the development subject to the terms of the compact.

PART II. FLOOD CONTROL AND RIVER REGULATION

THERE IS URGENT NEED FOR FLOOD CONTROL IN THE LOWER COLORADO

One of the important purposes of this bill is to control the floods of the lower Colorado. Danger from flood is serious and is acute. More than 100,000 American citizens are annually subjected to the menace of the river.

In the lower valleys of California and Arizona there are thriving cities and great irrigated areas with property value of \$200,000,000 or more, protected from the river only by means of artificial levees. These levees have been raised and extended until further or better protection by that means is virtually impossible.

The dam here authorized with the consequent large storage will permit of the regulation and stabilization of the river's flow and completely solve the flood danger. Unless prompt action is taken, any year may witness a flood of very serious and possibly disastrous consequences.

PHYSICAL CONDITIONS

Mr. F. E. Weymouth, formerly chief engineer of the Reclamation Service, in his 1924 report recommending the project, stated in the plain and conservative language of the engineer, the physical conditions causing the acute flood menace which exists:

In its present state of partial development, however, the river is a menace no less than it is a benefit. Each spring the snows accumulated on the mountain slopes of the upper basin melt with the advancing season until by the end of May

the lower river has become a raging torrent. This flood usually reaches its peak in May or June, after which it ordinarily subsides; the floods have been known to continue into August.

Annually the river carries past Yuma an average of 200,000,000 tons of silt. When the river is not in flood, this silt burden is largely carried to the Gulf, but in times of flood when the river spreads beyond its banks, it drops its load of silt not only at its mouth but wherever along its course the velocity of the water is checked. Especially does this deposition of material occur along and near the banks of its low water channel. These banks are thus built up by successive floods until they hold the waters to such an elevation that the main current of the stream eventually breaks through and finds a new channel in lower ground.

In the delta region below Yuma, being less restricted by natural lateral barriers, this tendency finds widest scope. Here the river has built a conical fan-shaped ridge cutting off what formerly was the upper end of the Gulf of California. Along the crest of this flat delta ridge runs the river; one slope toward the south terminates at sea level at the present head of the Gulf of California, the other extending northerly on a much steeper slope reaches a depression 250 feet below sea level at the rim of the Salton Sea. The portion of the ancient gulf thus cut off constitutes the Salton Basin, the irrigated area of which, lying largely below sea level along the northward delta slope, is known as Imperial Valley.

Again referring to temporary means adopted by Imperial irrigation district for flood protection the report proceeds:

Within a few years at the most the silt deposits will raise the elevation of this latter area to a point where the main current of the floods will again be thrown to the west and north at which time the assaults of the river on the Volcano Lake levee will be renewed with assurance that sooner or later another break into the valley will occur.

The menace in case of such a break is not limited as at Yuma and above to the loss of crops and improvements, and the cutting away of a few or many acres of valuable land, serious as that menace is. Besides all this, the greater danger here is that the levee once breached and the river at flood turned into Salton Sea, the steep gradient of its course will induce the cutting through the soft alluvial soil of a gorge in which the flow may not be checked until a large part of the valley has become submerged beneath the waters of an inland sea. (Hearings on H. R. 2903, 68th Cong., 1st sess., pp. 711, 712.)

It should further be pointed out that, in addition to destroying crops and damaging lands, the Imperial Valley has the decided disadvantage of being below sea level and having no outlet for the water. Ordinarily, the flood waters from any stream finds its way back into the stream as the flood subsides. This is not the case in Imperial Valley. There the flood waters remain in the basin until taken out by the slow process of evaporation.

DANGEROUS SHIFTING CHANNELS

In 1905 the river turned northward from its channel on the crest of the delta and flowed into the Imperial Valley for nearly two years before the break could be closed, thus forming a lake of some 300 square miles known as the Salton Sea. Through heroic efforts on the part of the Southern Pacific Railroad Co., at the request of President Roosevelt, the break was closed in 1907 and the river returned to its channel. The United States then expended approximately \$1,000,000 in the building of what is known as the Ockerson Levee to prevent another such disaster as that of 1905. This levee was barely completed, however, when in 1909 the river washed most of it away and turned westward into what is known as Bee River to Volcano Lake, still in Mexican territory, but in a lower depression on the delta. The river flowed on this course for 10 years, and was kept there by means of an extensive levee system built by the people

of Imperial Valley. By 1919, through its immense silt deposit, the river had filled the bed of Volcano Lake and Bee River to such an extent that it was again flowing on a ridge and the levees could no longer be made to hold it. The Imperial irrigation district then at an expense of approximately \$700,000 constructed an artificial channel from Bee River to what is known as Pescadero River and turned the river southerly into a triangular depression between Volcano Lake on the west and the old channel on the east. This is the area referred to by Mr. Weymouth in his report from which quotation is made.

This is the last remaining depression on the delta.

SILT AGGRAVATES FLOOD DANGER

The river has an annual discharge at Yuma of approximately 100,000 acre-feet of silt. This silt greatly aggravates the flood menace. No temporary works can be built to hold it. It was the silt deposit that built the deltaic ridge on which the river now flows. It was the silt deposit that filled the Bee River and Volcano Lake, so that the river could no longer be held at that point, and the same silt deposit will quickly fill the depression where the river now flows.

The gradient to the north into Imperial Valley is much greater than that to the south into the Gulf, and when the depression is filled there is no means known which, at any cost within reason, can prevent the river from again flowing into the Imperial Valley.

The dam proposed in this bill will catch and hold the greater part of the silt. Most of the silt finding its way onto the delta is from and above the canyon section. If no other dams were provided on the river, the one proposed in this bill would retain all of the silt finding its way into the reservoir for a period of 300 years, and for more than 100 years before its storage capacity and usefulness would be seriously interfered with. As other dams are constructed on the river they will catch and retain the silt, thereby further extending the usefulness of the Boulder Canyon Reservoir.

PAST FLOODS ABOVE IMPERIAL VALLEY

The Colorado River is subject to periods of great floods and great droughts. It has been known to reach a maximum discharge of more than 200,000 cubic feet of water per second and a low flow at the head works of the Imperial system of 1,250 cubic feet of water per second.

This causes extremely serious flood situations all along the lower river. Floods above Imperial Valley, were they not overshadowed by the exceptional flood danger to Imperial Valley, would attract attention and call for remedial measures. In 1916, the water stood 2 feet deep in the streets of the town of Yuma and threatened its destruction. In 1922, the river inundated a large part of Palo Verde Valley and the water stood several feet deep in the town of Ripley in that valley, destroying much property and otherwise causing a large amount of damage. Other floods have submerged the Parker Valley and also done serious damage to the city of Needles.

The greatest flood danger, however, is to the Imperial Valley lying far below the river's channel and with no outlet for flood waters once they enter the valley.

PAST FLOODS THREATENING IMPERIAL VALLEY

In 1914, the Volcano Lake Levee was breached and 10,000 cubic feet of water per second flowed through the levee into the Imperial Valley for many days before the levees would be repaired. More serious results were avoided by means of hundreds of men placing bags of earth on top of the levee.

In 1918 the Ockerson Levee, which had been rebuilt by Imperial irrigation district, was breached in two places. The flood water was successfully turned westward to Volcano Lake by other levees but not until after several thousand acres of land had been inundated and the workmen and a Southern Pacific train marooned. In a course of two days the men were removed but the train was held until the flood subsided some three months later.

In 1919, before the river was turned into Pescadero Cut, the levees were again breached and 4,000 acres of land inundated before the opening could be closed. The river was so high and the water soaked earth so soft that maintenance work could not be carried on by the usual means of dumping rock from trains operated for that purpose. This was found to be the case after a locomotive and cars had been lost in the attempt. Numerous smaller breaks have occurred. In 1925, with only 50,000 second-feet of water, the river turned against the levees and in two different places undermined and destroyed them for distances of several hundred feet. These smaller breaks are of annual occurrence and serious results have been prevented only by constant vigilance. Telephone communication is maintained throughout the entire length of the levees and numerous watchmen are constantly on patrol. Strings of dump cars are kept loaded with rock and locomotives under steam for immediate use.

LEVEE SYSTEM

The Imperial irrigation district has about 78 miles of protective levees in Mexico. The Yuma project has about 30 miles in Arizona and California and Palo Verde irrigation district has several miles of similar levees for the protection of Palo Verde Valley. These levees are of necessity built of loose silt upon a foundation of similar material. They are faced with rock hauled long distances by dump cars upon standard-gauge tracks maintained on the levees for that purpose. Levees thus constructed afford only partial protection. When the river strikes the levee it is not its overtopping that is so much feared, but the water will quickly eat away the loose material and the levee simply settles down and virtually disappears.

EFFECT OF FLOOD MENACE

Four hundred and sixty thousand acres are now being served with water by the Imperial irrigation district. There is not only the possibility of this land being inundated, but there is a constant knowledge that a comparatively small break in the levee system could destroy irrigation works and cut off water for irrigation and domestic purposes. This creates a constant feeling of uncertainty. Property values are less than half of what its income would justify. Capital for full development can not be had and where money is obtained it is

obtained at an excessive rate of interest. The Federal farm loan banks refuse to lend any money in Imperial Valley because of these conditions.

The happiness of the people, the security of their property, and the proper development of this highly productive area depend largely upon adequate flood control.

UNANIMITY OF VIEW AS TO FLOOD DANGER AND NEED OF QUICK RELIEF

An outstanding feature of the testimony before the committee was the unanimity of view respecting the existence of the flood danger, its seriousness, urgent need for quick action, and that storage up the river was the solution. Engineers like A. P. Davis, F. E. Weymouth, Gen. George Goethals, and William Mulholland joined with responsible executive officials like Mr. Herbert Hoover in voicing this idea. Admittedly and concededly, storage at Boulder Canyon as here authorized will effect the greatest measure of security against the river's floods which may be obtained.

The handling of this flood problem by itself would necessarily mean a heavy and unrecoverable outlay. By caring for it in the manner provided for by this bill, the Treasury is saved a very large sum of money. The plan here presented is a practical and businesslike one, having due regard for the integrity of Federal funds and the safeguarding of the general taxpayers.

PART III.—RECLAMATION AND ALL-AMERICAN CANAL

RECLAMATION AND ALL-AMERICAN CANAL IN BRIEF

Large storage at Boulder Canyon with its consequent river regulation below will make possible a full development of irrigation potentialities in the United States below the canyon. There are in Arizona, Nevada, and California some 1,500,000 acres of land susceptible of irrigation by the waters conserved by the dam and reservoir. Of this amount 550,000 acres, of which 460,000 acres lie in Imperial Valley, are now irrigated from the river.

The all-American canal will carry a portion of the conserved waters available for irrigation to where they can be used for the irrigation of a large body of these lands. Looked at in a somewhat narrow way it represents a cooperative enterprise between Imperial irrigation district, which serves the present irrigated area in Imperial Valley, the Coachella County water district, a public district embracing in its limits in the Coachella Valley, and the United States as owner of approximately 200,000 acres of public land about the rim of Imperial Valley, and about 11,000 acres of Indian lands now without water but possessing the same possibilities of development with water as the fertile lands in the valley. Neither Imperial Irrigation district, the Coachella district, nor the United States could afford alone to build a canal from the river. Acting in conjunction, the canal is entirely feasible. For various reasons the Imperial district now desires to augment and stabilize its water supply and is ready to bear its share of the cost of the main canal. Under the plan of the project as expressed in the bill, power, domestic water, and existing irrigation enterprises in effect, underwrite and guarantee all costs of the whole

development. The result is that the United States as proprietor of public lands will secure a water supply for these lands under exceptionally favorable conditions.

There are, however, other reasons why the all-American canal is a vital part of the development. It will cure an unsatisfactory international situation, which should not be allowed to continue, existent by reason of the present main canal serving Imperial Valley being in Mexico. It will also give the United States a general control over waters conserved by the reservoir essential to guard against overdevelopment of Mexican lands to the detriment of American interests.

CROPS PRODUCED

The area below Boulder Canyon is desert in character, having hot summers and mild winters. The Imperial and Coachella Valleys are essentially a winter garden. During the recent winter from December to March, approximately 111,000 carloads of lettuce were shipped out of this valley, and, in addition, vast quantities of peas, spinach, asparagus, summer squash, and many other vegetables were shipped to the eastern markets. In the early spring tomatoes, cantaloupes, and watermelons are shipped in large quantities. Something over 15,000 carloads of cantaloupes alone were shipped in 1925. Dates, early table grapes, winter strawberries, and many other fruits and vegetables in large quantities for the use of the country are shipped at a time when they can not be produced elsewhere. While this class of farming is expensive, under favorable conditions it is highly profitable.

STOCK RAISING

While this region is better known for its fruits and winter gardens, the mild open winters and abundant winter feed makes stock raising and particularly feeding beef cattle and sheep for the market desirable and profitable. Many thousands of head of feeder cattle are shipped into the Imperial and Yuma Valleys in the fall of the year and fattened during the winter for the spring market.

DAIRYING

The same condition that makes the feeding of livestock for market profitable makes possible the production of dairy products on a large scale. Imperial Valley alone markets more than 6,000,000 pounds of dairy products per year.

NO COMPETITION

The climatic conditions of the region below Boulder Canyon and Imperial Valley in particular are such that the products are not seriously in competition with other parts of the United States. A very large part of the products of the region can not be produced elsewhere and particularly at the time of year produced there. It produces the winter fruits and vegetables greatly needed in the great centers of population of the United States.

WATER SUPPLY

The only source of water for irrigation and domestic use below Boulder Canyon and including a very large area in Arizona and California is the Colorado River and its tributaries. That section of California including Palo Verde and Imperial Valleys must rely wholly upon the main stream of the Colorado River.

The low flow of the river is now completely utilized. Four times in recent years the Imperial Valley, which is supplied from the lowest point of diversion, has taken all of the water from the stream. In 1924 all of the water was taken for about 90 days, and for 76 consecutive days the river was completely dry below the Imperial Valley head gate. During much of this time there was not sufficient water for the needs, and at one time only 1,250 cubic feet of water per second was available for the Imperial canal system, when at that time the needs were for about 4,000 cubic feet of water per second. The low-water period in the river comes in August, September, and October, at a time when water shortage even of brief duration is disastrous. The crop loss on account of water shortage in 1924 is estimated at more than \$5,000,000. The development in the upper and lower basins of the river is proceeding rapidly and this water shortage is bound to be repeated unless the flood water is stored in a great reservoir as provided for in this bill.

WATER FOR IMPERIAL VALLEY ALL PASSES UNDER THE JURISDICTION OF MEXICO

Between Imperial Valley and the Colorado River there is a low-lying range of sand hills of no considerable elevation, but of sufficient elevation that water can not be carried through them without the all-American canal presently referred to. This range of hills extends a few miles below the international boundary line into Mexico.

When the development of the Imperial Valley was first conceived it was thought impossible to undertake the expense of building the all-American canal. The lands had not been proven, settlers in sufficient number had not yet located upon the land, and the private company which undertook the development was more interested in profit than in permanency.

It was found that water could be diverted at little expense from the Colorado River on the American side of the international boundary line and carried in an old wash or channel known as the Alamo Channel and thus flow by gravity some 60 miles through Mexico and back into the United States. This channel has from time to time been cleaned and straightened and the banks and sides strengthened so that it has served as a main canal for the Imperial Valley from the beginning to the present time and is still in use. There is no water in Imperial Valley except water carried through this canal. All of the water for irrigation and domestic use must be received in this way. Not only the farms and the farmers are dependent upon this canal but the inhabitants of six incorporated towns ranging in population from about 2,000 to more than 8,000 people are wholly dependent upon it for domestic supply.

MEXICAN CONTRACT

In order to carry the water into Mexico and deliver it back into the United States for the use of American citizens it was found necessary to organize a Mexican corporation for the purpose of receiving the water at the international line, operating the canal system in Mexico and delivering the water to the United States, as Mexico would not permit this to be done by a corporation or political agency of the United States. This Mexican corporation obtained a contract, sometimes referred to as a concession, from the Government of Mexico whereby it was granted the right to receive the water and deliver it back into the United States providing that the lands in Mexico receive from the canal all the water required for use in Mexico, not exceeding one-half of the amount passing through the canal. Under the contract Mexican users pay a consideration to be fixed or approved by the Government of Mexico. The price of water in Mexico is about 85 cents per acre-foot at the main canal, whereas the price in the United States is something over \$2 per acre-foot delivered. The cost of delivery is small compared with the great difference in the price of water. In other words, the cost of water to the Mexican farmer has always been very much less than the cost to the American farmer.

OPERATION OF THIS WATER SYSTEM IN A FOREIGN COUNTRY IS
UNSATISFACTORY

In the operation of this system under dual control many vexatious questions and problems constantly arise resulting in expense and delays. Duties are to be paid on materials taken into Mexico for operation and maintenance purposes, and different rules and laws are to be complied with. It is self-evident that these conditions will cause differences and misunderstandings which should not be permitted to exist if means can be found to avoid it.

DEVELOPMENT IN MEXICO

Development has constantly proceeded in Mexico to the extent that there was furnished from the main canal in 1925 water to 217,000 acres. The rapid development is more clearly understood by reference to the following table prepared by the general superintendent of Imperial irrigation district:

Use of water in Mexico

	Acres		Acres
1908	6,935	1917	77,500
1909	9,051	1918	118,530
1910	14,920	1919	136,580
1911	14,953	1920	190,000
1912	21,599	1921	120,000
1913	33,761	1922	150,000
1914	39,600	1923	180,000
1915	41,000	1924	185,022
1916	67,500	1925	217,000

There are more than 800,000 acres of land in Mexico susceptible of irrigation by gravity from this system. With Mexico constantly extending its use the development in the United States is now arrested and it is only a matter of time until lands in the United States now irrigated will of necessity be abandoned so that Mexico can be supplied its half of the water. This condition is well expressed by the Secretary of the Interior in his report to this committee on January 12, 1926, where he said:

The canal now supplies water for the irrigation of over 400,000 acres in California, and irrigators in Mexico at present require water for the irrigation of 200,000 acres. But Mexican irrigators are entitled, under this concession, to double the volume they are now using, or for enough to irrigate as many acres as are now irrigated in California. That is more water than the unregulated flow of the river will now supply. As the Mexican irrigators are on the upper end of the canal, the pinch of scarcity, when it has come in the past, or when it may come in the future, falls first on irrigators in the United States, which country supplies the water, all the construction cost and all the money advanced for operation. It is unfair to California irrigators now, and will be even more so after the reservoir is built.

It is physically possible to irrigate much more than 400,000 acres from this canal in Mexico. If this concession remains in force without any amendment and the canal continues to be used as now, the irrigated area in Mexico will continue to extend. The volume needed to be diverted from the river would be more than the direct flow at the low-water season, and the area irrigated in California would be subject to ruinous uncertainties and loss. If storage is provided, a part of the water for the irrigation of lands in Mexico would, under this concession, have to be supplied from the reservoir, as this canal would be the only means of conveying water to the Imperial Valley, and it can be operated only if the terms of the Mexican concession are complied with.

OPERATION UNDER THE CONCESSION IS NOT SATISFACTORY

This dangerous and highly unsatisfactory arrangement under which the Imperial Valley is now served should not continue. Imperial Valley has grown into a large and substantial community. Sixty thousand or more American citizens now reside in that valley. Within very few years it is likely that this number will be very greatly increased. Much wealth has been produced in this area and that wealth is constantly increasing. Four hundred and sixty thousand acres of land in the Imperial irrigation district alone is now highly productive and in course of time there will doubtless be added to this area approximately one-half million acres more. We do not believe that such a community should be made to be dependent upon a foreign government for the very existence of its people and the whole value of its property, regardless of the good faith and stability of that government when, at a reasonable expense, its water system can be put wholly under the jurisdiction of the United States. Even under a treaty there would exist a feeling of possible uncertainty which would make capital timid and hold back the development to which these people as American citizens are entitled. We believe the only proper and permanent solution of this water question is the all-American canal.

NOT SUFFICIENT WATER FOR ALL

It is extremely doubtful if there is sufficient water in the river for all land susceptible of irrigation, including lands in Mexico. Because of physical conditions Mexico, under present arrangements,

can develop much more rapidly in the future than can the lands in the United States. Its lands are near the river and irrigation work is inexpensive.

If Mexico obtains water for its full development, it seems almost certain that a somewhat similar area in the Colorado River Basin in the United States, that otherwise would be reclaimed, will forever remain a desert.

With Mexico on the upper end of the canal that serves Imperial Valley, Mexican development will proceed. There will thus be created, at the expense of lands in the United States, a great community in Mexico, served with water originating in the United States and competing with American farmers.

ALL-AMERICAN CANAL

Senate Document 142, Sixty-seventh Congress, second session, states that the all-American canal will serve 785,400 acres of land in the United States, of which 515,000 acres are in the Imperial irrigation district, 71,800 acres are in Coachella Valley, and 167,000 acres are public lands. This estimate has been looked upon as being very conservative.

None of the public lands or Indian lands can be irrigated from the present canal system or by gravity from any system that can be built, without the all-American canal. Under the plan of the project these lands will be appropriately charged under the reclamation law with their proper proportion of the cost of the canal or will be indirectly charged by being taken into the Imperial district (or perhaps a new district embracing Imperial and Coachella will be formed), which in turn will contract with the Secretary of the Interior to return the cost of the canal in the form of annual payments for water delivered. By combining these uses the expense of water to serve the public Indian lands as well as the lands in existing districts will not be disproportionate to the benefits received. Without such combination, it is doubtful if these public or Indian lands will ever be reclaimed. This affords an opportunity to irrigate these lands and at the same time provide a much-needed dependable water supply to all of Imperial and Coachella Valleys on a basis that will guarantee full repayment to the Government with interest. It is an opportunity that the Government, as proprietor of these lands, can not afford to let pass by.

SOLDIER PREFERENCE

The bill provides for preference right of entry on all public lands under the project to honorably discharged soldiers and sailors of the United States.

COST OF THE ALL-AMERICAN CANAL

The cost of the all-American canal, as estimated by the Secretary of the Interior in his report, is \$30,773,000, which includes \$1,600,000 now being paid by the Imperial irrigation district for the right to connect with and use the Laguna Dam.

PRESENT DIVERSION

The present head works of the Imperial system consists of a delivery gate some 750 feet in length in the west bank of the Colorado River 6,000 feet above the international boundary line. On account of the low-lying banks of silt material it has been found impossible to construct and maintain a permanent diversion wier or dam without flooding the Yuma Valley, now highly productive, under the Yuma reclamation project of the United States. About 1915 it was found, by reason of changes in river channel, that water could not be diverted into the Imperial system without some artificial works in the river. The people of the Yuma Valley obtained an injunction against the construction of such works. The necessity of the case was such, however, that since that time temporary works have been put in the river annually by the Imperial irrigation district under a contract with Yuma County Water Users' Association by the terms of which the Imperial irrigation district assumes full responsibility for any damages which may result to the Yuma County Water Users' Association, or anyone else on the Yuma project, by reason of such construction, and to guarantee payment the district is required to have executed annually and maintain a surety bond in the amount of \$500,000. In addition to this the district agrees to, with all possible dispatch, change its point of diversion to the Laguna Dam, and is required to make bimonthly reports to the War Department as to progress being made.

COACHELLA VALLEY

Special mention should be made of the conditions of the Coachella Valley, lying at the northern end of Imperial Valley. This valley, like Imperial Valley proper, is below the channel of the river and is subject to the river's flood menace. It is not served by the present Imperial system nor can it be served by this system being above the level of the main canal. It secures its water supply from wells fed by waters from the mountains lying to the west and north, the drainage area being small. Water levels are constantly going down and people of that section see facing them in the very near future the necessity of letting their highly productive ranches go back to desert. There are in this valley at least 72,000 acres of fine, irrigable lands, 13,000 of which are now under cultivation and are producing crops of the same general character as in the Imperial Valley proper, but reaching the markets usually from one to two weeks earlier. All of this fine land could be irrigated from the all-American canal, in the construction of which lies the only hope of this section.

THE COST OF CANAL WILL BE REPAYED

Under the terms of the bill the Secretary of the Interior is authorized to contract for the delivery of water from storage and through the all-American canal and for the sale of power at the dam in an amount sufficient to repay the entire cost of the project to the United States, with 4 per cent interest. The Secretary is not permitted to move until this has all been fully assured. In other words, the whole project, including the all-American canal, will be without expense to the United States.

PART IV. DOMESTIC WATER

DOMESTIC WATER SUPPLY

The construction of the high dam at Boulder or Black Canyon, besides accomplishing the purposes of flood control and reclamation of public lands, and besides making possible the development of a large amount of electrical energy to finance the cost of the works, will, incidentally, enable a large number of cities in southern California to secure a much needed water supply.

The coastal belt of southern California includes a strip of land from 20 to 60 miles in width, bordering on the Pacific Ocean from Los Angeles to the Mexican boundary, a distance of about 150 miles. It includes the counties of Los Angeles, San Bernardino, Riverside, Orange, and San Diego, south and west of the high mountains. This coastal belt has a population of more than 1,800,000. The present population of Los Angeles County is something over 1,400,000, of which more than 1,000,000 are within the limits of the city of Los Angeles.

The four counties of Los Angeles, San Bernardino, Riverside, and Orange, from the standpoint of ultimate water supply are a unit. San Diego County is somewhat detached from the others and presents a unit of its own.

As an incident to a remarkable development, the population in this coastal region has increased from 270,000 in 1900 to over 1,800,000 in 1925. In the same period the population of Los Angeles County has grown from 170,000 to 1,425,000 and the population of the city of Los Angeles from 120,000 to more than 1,000,000. The population of Los Angeles has practically doubled in the past five years, having increased about 500,000 since the last Federal census.

The water supply of the coastal belt of Southern California is affected by cycles of wet and dry periods, periods of 10 to 12 years, in which the average rainfall and stream flow are below normal, followed by periods of the same duration, in which they rise above normal. Owing to increase of population, even average water conditions will leave a shortage of supply in a few years. To meet this situation, the cities of that region have been investigating possible sources of additional water supply.

These investigations have shown that about 1,500 second-feet of water for domestic purposes only will be required for these communities, and that the only possible source is the Colorado River. Plans are being formulated to go to that river for such supply. Naturally, the city of Los Angeles, because of its size and wealth has taken the lead. That city has by an overwhelming vote recently authorized a bond issue of \$2,000,000 for preliminary investigation and construction.

Plans for obtaining water from the Colorado River for southern California cities contemplate an aqueduct about 260 miles in length, and taking water from the river near the town of Blythe, Calif., which is about 150 miles below Boulder Canyon. This aqueduct will cost, according to preliminary estimates, about \$150,000,000. Water will have to be lifted by pumping about 1,400 feet in order to surmount an intervening mountain range.

It is proposed to organize a public district embracing Los Angeles, Pasadena, Glendale, and other interested communities to carry through this domestic water project. This district will require for pumping purposes, a large block of electrical energy, amounting, when the aqueduct is operated to full capacity, to possibly 250,000 horsepower, thus adding materially to the market for power from the dam.

A high dam creating large storage is essential in order that these cities may obtain the water they need from the Colorado River. It will impound for useful purposes large quantities of flood waters of the river which now annually waste into the sea, and will have the effect of desilting the river flow and thus make it suitable for domestic use.

One of the most serious features of the present water situation in the region where these cities are located is the encroachment of domestic needs on the agricultural supply. The acquisition of a water supply from the Colorado River for these cities, while it does not contemplate irrigation uses, will, incidentally, benefit present agriculture by relieving it from drafts for domestic purposes.

The unquestionable needs of southern California cities for domestic water will assure heavy contributions, on account of water stored and delivered and power for pumping purposes, to Government revenues from the project.

PART V. POWER

The Federal Government is interested in power on the project from two points of view:

First. As a means by which the great works authorized may be financed without a drain on the National Treasury.

Second. As regards the effect of the creation of this great power supply upon social and economic conditions in the Southwest and in its fair and wise distribution.

In the hearings on the project a mass of testimony was produced bearing upon the market for power. Showings were made as to the future requirements and markets for such power of Los Angeles, Pasadena, Riverside, and other cities of southern California, of the States of Nevada and Arizona, of transcontinental railroads, and the private distributing companies. It was also developed that southern California cities in connection with a greatly needed domestic water supply from the Colorado River would require a large block of the power for pumping purposes.

Although the testimony clearly indicated an ample and waiting market, yet in view of the whole situation the Secretary of the Interior in his report on the bill of January 12, 1926, suggested the following very simple and practicable plan of determining the question of adequacy of such market and thus removing this problem from the field of speculation:

In order to give assurance before any large expenditure is incurred that the anticipated revenues from this development will be obtained, the bill should contain a provision that before any bonds are issued and sold and before awarding any contracts for construction, the Secretary of the Interior shall secure the execution of contracts with irrigation districts, municipalities, and corporations, on terms to be fixed, for the delivery of all water to be supplied for irrigation, domestic, and municipal uses, and shall obtain definite commitment for the purchase of power from responsible bidders in an amount to insure a sufficient return from this development to repay the money to be expended with interest within a period of 50 years.

This suggestion was cheerfully accepted by the proponents of the legislation, met with the approval of the committee, and is expressed in the bill, section 4 (b) of which provides:

Before any money is appropriated or any construction work done or contracted for, the Secretary of the Interior shall make provision for revenues, by contract or otherwise, in accordance with the provisions of this act, adequate in his judgment, to insure payment of all expenses of operation and maintenance of said works incurred by the United States and the repayment, within fifty years from the date of the completion of the project, of all amounts advanced to the fund under subdivision (b) of section 2, together with interest thereon.

As power at the dam will be cheap power (its estimated sale price at the switchboard of the power plant below the dam is 3 mills per kilowatt-hour) it may be confidently expected that this somewhat unusual and rigorous requirement will promptly be met.

The plan of the Boulder Canyon project as expressed in the bill contemplates allocation of the power or power rights at Boulder Canyon amongst various agencies, including political subdivisions, municipalities, domestic water-supply districts, and private companies.

The evidence clearly indicates that the total power developed at Boulder Canyon will about supply the available waiting market when such power is ready for distribution. There should not be any serious overlapping of applications and the proper allocation to all agencies in the market for the power should be easily possible without doing injustice to any.

With such a distribution of power or power rights at the dam all danger of monopolization will be avoided and there will be created a sound competitive condition between these various agencies which will insure the consuming public protection in the form of reasonable rates and good service.

One other point is here entitled to mention. Early in the hearings it was suggested that the bringing in at one time of this great block of power would flood the market and work hardships on private investments. This suggestion was due to lack of understanding of the plans. Power may be made available when the dam reaches the necessary height for power-plant operation, and may be gradually increased to the total amount as the dam reaches its maximum height, or approximately during a period of three years. Thus the power will enter the market gradually.

It has been urged by some that a development at Boulder Canyon does not fit in with a comprehensive plan of development of the river. The committee is satisfied that this is not so. Other development may proceed without interference by reason of this project. Secretary Hoover in his testimony regarding the location of the dam declared:

I do not believe that construction at that point is going to interfere with the systematic development of the Colorado River for storage and power above and below.

PART VI. FINANCIAL SOUNDNESS OF PROJECT

FINANCIAL SET-UP

The Secretary of the Interior, in his report of January 12, 1926, gives his estimate of the financial working of the project as follows:

Capital investment

Estimated cost for—

26,000,000 acre-foot reservoir-----	\$41, 500, 000
1,000,000 horsepower development-----	31, 500, 000
The all-American canal-----	31, 000, 000
Interest during construction on above five years at 4 per cent--	21, 000, 000

Total-----	125, 000, 000
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Annual operation

Estimated gross revenues from—

Sale 3,600,000,000 kilowatt-hours, power at three-tenths cent..	10, 800, 000
Storage and delivery of water for irrigation and domestic purposes-----	1, 500, 000

Total-----	12, 300, 000
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Estimated fixed annual charges for—

Operation and maintenance, storage, and power-----	700, 000
Operation and maintenance, all-American canal-----	500, 000
Interest on \$125,000,000 at 4 per cent-----	5, 000, 000

Total-----	6, 200, 000
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Estimated annual surplus, \$6,100,000, or thought to be sufficient to repay the entire cost in 25 years.

It will be observed that the allowances he makes for operation and maintenance are extremely liberal. The testimony points to costs being more favorable than thus indicated.

COST ESTIMATES HAVE BEEN CAREFULLY MADE

The cost estimates given by the Secretary of the Interior are the result of long and painstaking studies of that department. Mr. F. E. Weymouth, then chief engineer of the Reclamation Service, under whose personal supervision the major part of the studies were made, testified before the House committee as follows:

We have on our consulting staff Mr. A. J. Wiley and Mr. Louis Hill, and we have consulted them regularly in reference to this whole problem. We have had several engineering board meetings to consider the various phases of the problem, especially in reference to types of dams and methods of construction and cost of all that sort of thing. They were outside of our regular engineering force.

Asked about the engineers in his organization, he stated:

Mr. Walker Young, who is present to-day, has had charge of the investigations in Boulder Canyon for about three and a half years. Mr. Young had more to do than anybody else in the actual working out of the detailed designs and estimates, but he at all times had the advice of our chief designing engineer, Mr. J. L. Savage, whose headquarters are now in Denver, and also of the whole designing force of that office.

* * * * *

Mr. Savage has under his charge about 25 or 30 engineers of all kinds. * * * In addition to that, we have had the assistance of Mr. Gaylord, who was until very recently our chief electrical engineer, and his assistants, and Mr. Dibble

and his assistants. In the study of the water supply, the irrigable areas, and the control of the river for flood or for power purposes, Mr. Debblor, who is here to-day, has made most of those studies.

* * * * *

We had Mr. Ransome, a geologist of the Geological Survey, make a very exhaustive geologic examination and report on the Boulder Canyon reservoir and dam site, and Mr. Jenison, of the Geological Survey, also assisted him. The Bureau of Standards has done a lot of work for the service in testing materials for construction. There is another man that I forgot to mention, a very valuable engineer and geologist, Mr. Homer Hamlin. The most work that has been done perhaps was done by Mr. Arthur P. Davis while he was the director of the service.

* * * * *

Well, we have utilized our regular forces a great deal; Mr. James Munn, who was formerly a contractor and is, perhaps, one of the best construction men in the country. We have had his advice, especially in reference to unit costs that we have used in the estimates.

Concerning the advisory board, composed of Mr. Wiley and Mr. Hill, he said:

We have considered with them each step that we have taken as it came up and it has had their approval. (Hearings on H. R. 2903, 68th Cong., 1st sess., pp. 741-743.)

RETURN OF ADVANCES FULLY ASSURED

The provisions of the bill and the character and solvency of the organizations with which the Secretary will contract assures to the Government full return of the money advanced with interest. It will be no experiment. The Secretary will not be contracting with organizations of doubtful solvency. As to domestic water, as well as power for pumping purposes, his contracts will be with cities or an association of cities with an assessed wealth of well over a billion dollars; irrigation water will be delivered under enforceable contracts to proven and established districts that have been in successful operation for many years; and power, which is the great financial asset of the project, will be sold to such applicants as the State of Nevada, the State of Arizona, the cities of Los Angeles, Pasadena, Riverside, and Glendale, in California, and to strong private corporations like the Southern California Edison Co., operating in southern California. Each of these agencies has expressed intentions of becoming an applicant for power. These contracts will be binding and enforceable, and the Secretary is not permitted to make any expenditures on the project until such contracts are secured.

PART VII.—ANALYSIS OF BILL

The bill has been very carefully shaped. In its present form it carries the full approval of the Secretary of the Interior. Financial features came from the Treasury Department. Many rather technical provisions intended for the protection of upper basin States originated with the water commissioners of Colorado, Wyoming, and Utah.

Section 1 states the purposes of the project, to wit:

(a) Controlling the floods and regulating the flow of the lower Colorado River.

(b) Providing for storage and delivery of the waters of the river for reclamation and other beneficial uses and for generation of electrical energy, the last as a means of making the project a self-supporting and financially solvent undertaking.

The section also authorizes the works essential to carry out these purposes, to wit:

(a) A dam at Boulder or Black Canyon in the Colorado River adequate to create a storage of not less than 20,000,000 acre-feet.

(b) An all-American canal for the delivery of water to lands in Imperial and Coachella Valleys.

(c) A power plant at the dam for the generation of electrical energy from the waters discharged from the reservoir created by the dam.

(Section 6 leaves the construction of the power plant optional with the Secretary of the Interior. He may, if he finds it feasible for financial and other reasons, lease the right to use the water thus discharged.)

Section 2 contains the main financial provisions of the bill. It was prepared by the Secretary of the Treasury.

Subdivision (a) established a special fund into which all revenues must be paid and from which all expenditures are to come.

Subdivision (b) authorizes the Secretary of the Treasury to advance to the fund up to \$125,000,000, from which amount moneys are to be paid back to the General Treasury to cover interest on advancements. Of this amount approximately \$21,000,000 is for interest during construction.

Subdivision (c) makes moneys from the fund available for construction and operation and maintenance purposes, upon the usual appropriations being made.

Subdivisions (d) and (e) prescribe the accounting requirements necessary to maintain the integrity of the fund and to charge beneficiaries of the project with retirement of advances and interest, as well as maintenance and operation.

Subdivision (f) authorizes the Secretary of the Treasury to borrow money, if necessary, to meet appropriations to the fund.

Subdivision (g) provides for a retirement, if any, of obligations by payments made by beneficiaries on account of retirement of principal.

Section 3 is the usual technical provision to meet legislative practice, authorizing appropriations to the fund for carrying out the project.

Section 4 (a) requires certain action by interested States affecting water rights before the bill becomes operative.

Section 4 (b) requires full advance financing of the project before any outlays are made.

Section 5 authorizes the Secretary of the Interior to make contracts for storage and delivery of water for irrigation and domestic purposes and for sale of power at switchboard to meet financial requirements of the act.

After the Government has been repaid with interest all of its advancements, charges for use of the dam and works at the dam, shall be on such basis as Congress may authorize. The effect of this provision, when taken in connection with provisions in section 6 that the title to the dam and works there shall always remain in the Government, is to allow the Government to have these great works even after they have been paid for by the beneficiaries.

By this section no attempt is made to segregate charges against different uses of the project. The whole project is considered as a unit and such segregation is left to the judgment and discretion of the Secretary.

The section outlines briefly some of the requirements respecting sale of power.

(a) Contracts are limited to 50 years.

(b) Provision is made for renewals along the lines provided in the Federal water power act for renewals of licenses.

(c) Prices for electrical energy are to be fixed to meet revenue requirements and determination of conflicting applications are to be governed by the provisions of Federal water power.

(d) The Secretary of the Interior may require larger agencies securing power to permit smaller agencies to share in transmission lines.

Section 6 requires that water shall be released from the dam, first, in the interest of flood control and river regulation; second, in the interest of irrigation and domestic uses, and lastly, for power, thus making power a subordinate use. The title to the dam and works at the dam are always to remain in the United States, which will manage and control the same. There is a proviso in this section, however, permitting the Secretary of the Interior either to lease units of the power plant, if he elects to construct the power plant or instead of constructing a power plant to lease the privilege of using water discharged for the generation of power. If he pursues either of these alternatives, various provisions of the Federal water power act intended to safeguard the public interest will govern the Secretary.

Section 7: Under section 7, the Secretary of the Interior is authorized in his discretion, when the United States has recouped all of its advancements with interest on account of the entire project, to transfer title to the canal to agencies paying therefor. Lands paying for the canal are given certain privileges to utilize power privileges created by drops in the canal to aid in meeting their obligations toward repayment of the cost of the works.

Section 8 subordinates the project to the terms of the Colorado River compact.

Subdivision (a) requires appropriations of water to be made under the laws of a ratifying State.

Subdivision (b) requires the United States or its licensees to observe the terms of the compact.

Subdivision (c) contemplates the making of a subsidiary compact between Arizona, California, and Nevada for the equitable division of benefits arising from the use of the waters of the river.

Subdivision (d) is a technical provision deemed appropriate by law officers of the Government to permit the United States to take advantage of certain rights granted it in the Arizona constitution.

Section 9 provides for reclamation and settlement of public lands with preference rights given to ex-service men and women.

Charges against this land under the reclamation law will go into the fund provided. It is doubtful if this section will be used to any extent, as the plans of the Interior Department contemplate contracts under section 5 with responsible irrigation agencies which will make payments for water adequate to meet all financial requirements and which agencies will under existing laws take into their boundaries public lands subject to service from the canal.

Section 10 preserves an existing contract between Imperial irrigation district and the United States by which the former has the right to connect with Laguna Dam. The district has already paid a substantial sum on this contract.

Section 11 contains definitions.

Section 12 approves the Colorado River compact either upon a seven-State or six-State ratification.

Subdivision (b) of this section makes any rights of the United States to the waters of the Colorado River subordinate to the terms of the compact so approved.

Subdivision (c) requires that all privileges from the United States respecting the public lands shall be impressed with the terms of the compact, to which approval is given in subdivision (a).

Subdivision (d) is merely supplementary to provisions of subdivision (c).

Section 13 declares the act to be a supplement to the reclamation law, which is made to govern where not inconsistent.

In a great project such as this many details may properly be referable to a general law such as the reclamation act.

Section 14 authorizes an appropriation of \$250,000 from the fund created for investigations in the upper Colorado River Basin.

Section 15 merely gives a short title for the act.

CONCLUSION

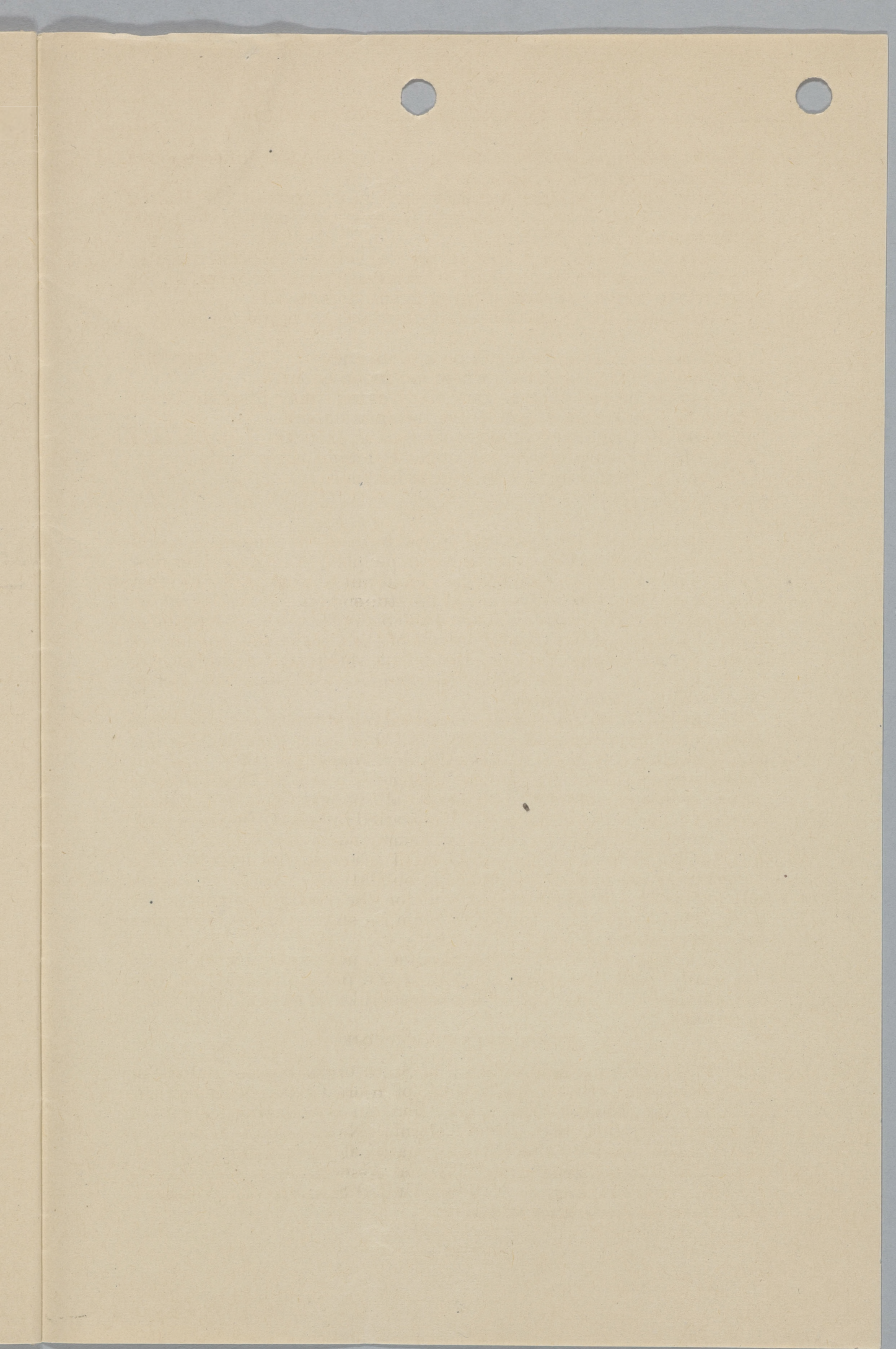
This is a project which should appeal both to the imagination and the hard business sense of the American people. A mighty river now a source of destruction is to be curbed and put to work in the interest of society. The dam will be one of the stupendous engineering works of the world. The reservoir created will be by far the largest artificial body of water in existence and outside of the Great Lakes the largest body of water in the Nation. Lands now desert and worthless will be brought into productivity. New homes will come into being. New wealth will be created.

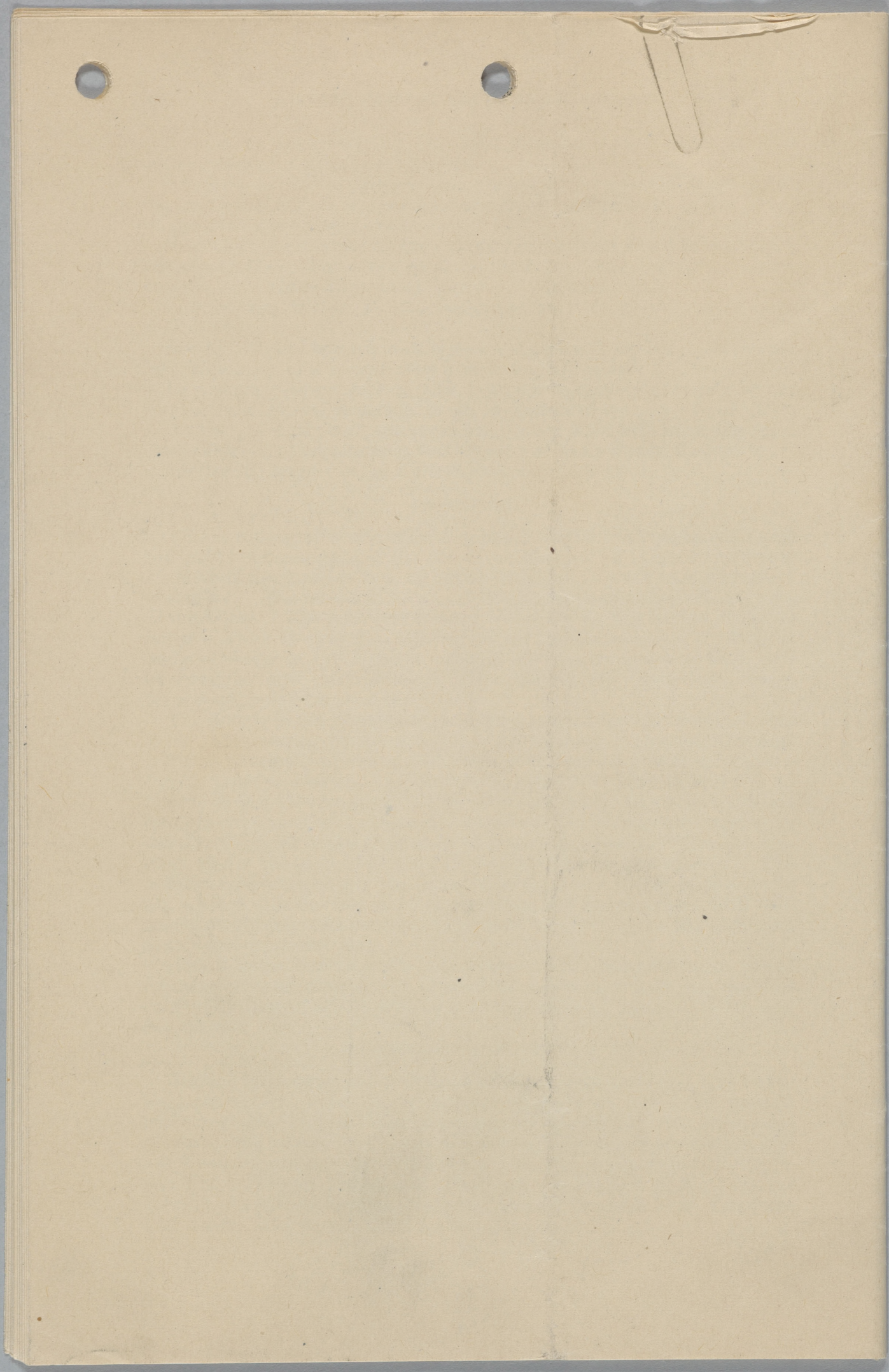
The people of the Southwest are not asking of the Government this great public improvement as a gift. All they ask is that the Government lend its good offices to make this development possible. Established communities and responsible agencies will bind themselves to return to the Government not merely all moneys expended, but all moneys expended with interest. The varied interests concerned with the development make a centralized agency necessary. The Government under the plan of the development assumes this agency. The beneficiaries assume all the financial obligations. Nor is this quite all. After the development is paid for the Government still will retain ownership and control of the dam for such use as the Congress may deem wise and just.

It is a great constructive improvement, not experimental, sound financially, well considered, shaped in the public interest, one the consummation of which will be a source alike of national pride and advantage.

INDORSEMENTS OF PROJECT

Besides numerous indorsements of State organizations and counties, cities, and other organizations of more or less local nature, including the Boulder Dam Association, an organization composed of some 200 public bodies in California, Nevada, and Arizona, it has been indorsed by the following national organizations: American Farm Bureau Federation, National Association of Real Estate Boards, American Legion, National United Spanish War Veterans, and American Federation of Labor.





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W. H. KILLAM, CLERK

United States Senate

COMMITTEE ON IMMIGRATION

May 13, 1926

Mr. Hiram W. Johnson, Jr.,
Attorney at law,
Mills Building,
San Francisco, California

My dear Jack:

You have been extremely kind to your Mother in the matter of the purchase of an automobile. As she has told you in her telegrams, she had under consideration here a Lincoln town car, a year old, which had gone about fifteen thousand miles, for which she would have to pay Thirty Five Hundred Dollars, or thereabouts. This morning she has wired you asking you to make the purchase of the Locomobile, about which you telegraphed her. I have left the matter entirely to your Mother because I wanted to present her with this automobile for her birthday as my birthday present to her, and I wished her to be entirely satisfied with what, in reality, she will use much more than I will. I am enclosing herein my check No. 1345 on The Riggs National Bank of this City, for Twenty-Five Hundred Dollars (\$2500.00) which will pay, as I understand it, the purchase price of the Locomobile, and a part of the cost of transportation. Let me know, please, just how much is required, and I will at once remit it. Of course, Mother is most anxious to get the car at the earliest possible moment, but I assume with the varnishing and the fixing, it can not be shipped from California before the date that you suggested, the 29th, and that it will take about three weeks in transit. It

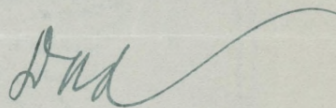
2.

can be shipped as I understand it, in talking to Dollar here, to Baltimore, which of course will be more convenient for us than shipping it to New York.

I am writing you very hastily in order to send you the purchase price.

Thanking you again, with love to the children and yourself,

Affectionately,

A handwritten signature in cursive script, appearing to read "Dad", followed by a long, sweeping horizontal flourish.

HIRAM W. JOHNSON, CALIF., CHAIRMAN
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W. H. KILLAM, CLERK

United States Senate

COMMITTEE ON IMMIGRATION

May 14, 1926

Mr. Hiram W. Johnson, Jr.,
Attorney at law,
Mills Building,
San Francisco, California

My dear Jack:

In your telegram to Mother last night you said the car would be shipped on the Manchuria, and I think, stated it would arrive in New York on June 16. The Dollar boats, - I have forgotten their corporate name - sail, I think, at the same time from San Francisco, May 29, and take about three weeks to Baltimore, where they stop. Of course, it would be very much more convenient for us if the car were unloaded at Baltimore. At the same time, I think, Mother wants it at the earliest possible moment, so I would be glad if you would investigate the sailings of the boats, time of arrival, and ascertain whether or not I am correct about one line, at least, stopping at Baltimore.

With love,

Affectionately, *my*

*5000 2. 20 Cables
Hundred*

Mar 22 Jan 5 = 3000 July 16

h 7 R \ L auto 100.70

100. - 9 11

HIRAM W. JOHNSON, CALIF., CHAIRMAN
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COMMITTEE ON IMMIGRATION

May 14, 1926

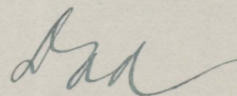
Mr. Hiram W. Johnson, Jr.,
Attorney at law,
Mills Building,
San Francisco, California

My dear Jack:

I wrote you very hastily yesterday sending you check. I wanted now to add how delighted I was at the purchase that you made of the locomobile in California for Mother. I am sure it will be everything that she desires. The saving of a thousand dollars is a very big item to me. I was perfectly willing to go the limit for your Mother because it is probably the last automobile I will ever buy, and she was rather unhappy in not having a town car. We would have had to pay for the Lincoln she was considering, and which she admired so much, at least \$3500.00. In order to pay this sum, and to meet other obligations, I had to draw the only savings account I had from the Sacramento Bank. I left with your Mother entirely the choice, but I was very glad when she chose, as you did. I just wanted you to know how happy I was over your outcome, and to tell you how very much I thank you. I know the "loco" will be everything we wish.

Love to the kiddies and yourself.

Affectionately,



HIRAM W. JOHNSON, CALIF., CHAIRMAN
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W. H. KILLAM, CLERK

United States Senate

COMMITTEE ON IMMIGRATION

May 15, 1926

Mr. Hiram W. Johnson, Jr.,
Attorney at law,
Mills Building,
San Francisco, California

My dear Jack:

I am compelled to bother you again but I don't know whom else to trouble, and I know that you will ascertain the facts, and advise me. Yesterday I received from Mrs. French the enclosed bill, which apparently is dated April 8, 1926, James R. McElroy, Contractor, 180 Jessie Street, San Francisco, for \$594.32, evidently for street and crossing improvements on Vallejo and Taylor Streets, against your Mother's lot on Vallejo Street. I assume that it is the usual street improvement charge, which becomes a lien against the land, and that the amount can not be successfully questioned. What I want to ascertain is whether or not this sum can be paid in instalments, or must be fully paid at once. It would be much easier for me if I could pay in say three instalments, or in two instalments, if necessary, rather than pay the whole \$594 immediately. Within what time, too, must the sum be paid. Will you please let me know, and if necessary, let me know by wire, so I may make suitable arrangements.

I am imagining you this Saturday afternoon as I dictate this note out on the water with the kiddies. I really envy you. Mother received this morning Frere's little newspaper. I think it is marvelous. Mother told me that she had written Frere, and

2.

within a day or two I will try and write him, too. I want to write him merely to encourage him in doing this sort of thing, for it evinces imagination and an ability which I think astounding in a lad of his years.

With love to the boys and yourself,

Affectionately,

Don

HIRAM W. JOHNSON, CALIF., CHAIRMAN
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W. H. KILLAM, CLERK

United States Senate

COMMITTEE ON IMMIGRATION

May 20, 1926

Mr. Hiram W. Johnson, Jr.,
Attorney at law,
Mills Building,
San Francisco, California

My dear Jack:

I think from a letter I received from you a short time ago about the coupons, that there're probably four or five aggregating something near a hundred dollars that could be clipped now. If so, will you clip them and give them to Harriet to pay small bills with.

Affectionately,

Dad

CLASS OF SERVICE	SYMBOL
Telegram	
Day Letter	Blue
Night Message	Nite
Night Letter	N L
If none of these three symbols appears after the check (number of words) this is a telegram. Otherwise its character is indicated by the symbol appearing after the check.	

WESTERN UNION



TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

CLASS OF SERVICE	SYMBOL
Telegram	
Day Letter	Blue
Night Message	Nite
Night Letter	N L
If none of these three symbols appears after the check (number of words) this is a telegram. Otherwise its character is indicated by the symbol appearing after the check.	

The filing time as shown in the date line on full rate telegrams and day letters, and the time of receipt at destination as shown on all messages, is STANDARD TIME.

RECEIVED AT 722 MARKET STREET, SAN FRANCISCO, CALIF. ALWAYS OPEN

1926 MAY 25 AM 11 12

AB120 45 GOVT BLUE

SN WASHINGTON DC 25 1155A

HIRAM W JOHNSON JR

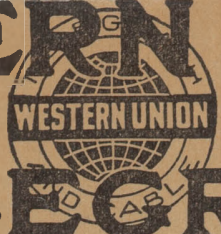
ATTORNEY AT LAW MILLS BLDG SANFRANCISCO CALIF

WE UNDERSTAND YOU SHIP CAR MANCHURIA TWENTY NINTH ARRIVING NEWYORK
JUNE SIXTEENTH HAS CAR REGULAR CALIFORNIA STATE LICENSE PLATES
IF NOT WE MUST OBTAIN HERE TAKE NEWYORK AND ATTACH WE WOULD PREFER
CALIFORNIA LICENSE PLATES WE ARE LIKE CHILDREN WITH NEW
TOY IN ANTICIPATION LOVE

HIRAM W JOHNSON

CLASS OF SERVICE	SYMBOL
Telegram	
Day Letter	Blue
Night Message	Nite
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WESTERN UNION



TELEGRAM

NEWCOMB CARLTON, PRESIDENT

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RECEIVED AT 722 MARKET STREET, SAN FRANCISCO, CALIF. ALWAYS OPEN

1926 MAY 27 AM 7 44

AA206 11

SN WASHINGTON DC 27 1024A

HIRAM W JOHNSON JR 1658

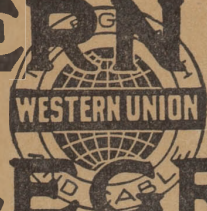
ATTORNEY AT LAW MILLS BLDG SANFRANCISCO CALIF

MOTHER WISHES BIRTHDAY JOINT PRESENT YOU ARCH LETTER AIR MAIL TODAY

HIRAM W JOHNSON

CLASS OF SERVICE	SYMBOL
Telegram	
Day Letter	Blue
Night Message	Nite
Night Letter	N L
If none of these three symbols appears after the check (number of words) this is a telegram. Otherwise its character is indicated by the symbol appearing after the check.	

WESTERN UNION



TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

CLASS OF SERVICE	SYMBOL
Telegram	
Day Letter	Blue
Night Message	Nite
Night Letter	N L
If none of these three symbols appears after the check (number of words) this is a telegram. Otherwise its character is indicated by the symbol appearing after the check.	

The filing time as shown in the date line on full rate telegrams and day letters, and the time of receipt at destination as shown on all messages, is STANDARD TIME.

RECEIVED AT 722 MARKET STREET, SAN FRANCISCO, CALIF. ALWAYS OPEN

1926 MAY 27 AM 7 56

AB6 11

SN WASHINGTON DC 27 1024A

ARCHIBALD M JOHNSON 1684

ATTORNEY AT LAW MILLS BLDG SANFRANCISCO CALIF

MOTHER WISHES BIRTHDAY JOINT PRESENT YOU JACK LETIER AIR MAIL TODAY

HIRAM W JOHNSON

J

HIRAM W. JOHNSON, CALIF., CHAIRMAN
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W. H. KILLAM, CLERK

United States Senate

COMMITTEE ON IMMIGRATION

June 3, 1926

Mr, Hiram W. Johnson, Jr.,
Attorney at law,
Mills Building,
San Francisco, California

My dear Jack:

I received from Miss Kemp a note dated May 29 enclosing insurance policy covering locomobile in transit on the Manchuria together with duplicate of same. I have also received this morning your letter of May 28 containing the original contract with the Rolls Royce Company for purchase of locomobile, subsequent receipt for full purchase price, and bill of sale to Minnie L. Johnson, also slip from Motor Vehicles Department of California showing license number 340621, also Bill of Lading, S.S. MANCHURIA shipped by you to me a locomobile, and duplicate of same. Thank you for all this care. You were quite right, I wished title to the machine in Mother.

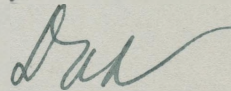
In thirteen days from now the Manchuria ought to reach New York City. I will be on hand, if it is possible to receive it. If not, Mother and the chauffeur will go down, and he will drive it home. I know that it will be everything that we desire, and we're both looking forward to its arrival, and counting the days until then. It will come just in the nick of time. Our old car broke down, but we have a good boy and he got it running again yesterday and he may be able to keep it on its feet for two weeks more. After that, its usefulness will be at an end.

Mr. Hiram W. Johnson, Jr. - 2

A couple of days ago I received your letter describing Hiram's boxing bout. I think it was fine. Congratulate him for me. If he can stand up, and stand up successfully as he did in this instance, he must be in pretty good physical condition, notwithstanding the fact that he does not indulge in the sports that you would prefer to have him participate in. These two boys of yours are wonderful boys, naturally so because they are yours, and because they are my grandchildren.

With love to both of them, and much to yourself from Mother and from me,

Affectionately,

A handwritten signature in cursive script, appearing to be 'Dad', written in dark ink.

HIRAM W. JOHNSON, CALIF., CHAIRMAN
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W. H. KILLAM, CLERK

United States Senate

COMMITTEE ON IMMIGRATION

June 8, 1926

Major Archibald M. Johnson, and
Mr. Hiram W. Johnson, Jr.,
Attorneys at law,
Mills Building,
San Francisco, California

My dear Boys:

Yesterday I received Archie's note of June 1 with his check for \$175.00 with which to pay for Mother's birthday gift here. Your Mother is quite delighted with the antique tea set to be presented to her on her birthday by you. I examined it Saturday night, after it had been marked with her initials "M^MJ", and so far as I can judge, it is exceedingly pretty. I am utterly unable to determine its age, but Mother says it is more than one hundred years old. It consists of five pieces, sugar bowl, milk pitcher, tea pot, coffee pot, and large hot water receptacle. It is rather peculiarly constructed, and mighty pleasant to look upon. While at first I disliked the idea of presenting Mother with something of this sort that she herself had picked out, her joy in it has reconciled me to the manner of the gift, and I think we did the very best thing possible. She "jewed" the man down to \$125.00, and \$4.00 were paid for marking each piece, making the total cost \$129.00. You have, therefore, a rebate on the check for \$175.00 sent me, of \$46.00, and this I enclose to you herein in the shape of my check number 1353 on Riggs National Bank for \$46.00.

2.

I note from Art's letter that some other antique silver is to be sent to your Mother. I daren't tell her this. It will come as a surprise with the gift. She expects nothing more, and you know how she is in the matter of gifts.

With my love to both of you, I am

Affectionately,

Dad