



Class _____

Book _____

PRESERVATION OF NIAGARA FALLS

HEARINGS

ON THE SUBJECT OF

H. R. 26688

SIXTY-FIRST CONGRESS, SECOND SESSION

RELATING TO THE CONTROL AND REGULATION OF THE WATERS OF
NIAGARA RIVER AND THE PRESERVATION OF NIAGARA FALLS

HELD BEFORE THE

COMMITTEE ON RIVERS AND HARBORS

OF THE HOUSE OF REPRESENTATIVES
OF THE UNITED STATES

SIXTY-FIRST CONGRESS, THIRD SESSION

CONSISTING OF

D. S. ALEXANDER, N. Y., *Chairman.*

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JAMES H. DAVIDSON, WIS.

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PRESERVATION OF NIAGARA FALLS.

HOUSE OF REPRESENTATIVES,
COMMITTEE ON RIVERS AND HARBORS,
Friday, January 6, 1911.

The committee met at 11 o'clock a. m., Hon. D. S. Alexander (chairman) presiding.

The CHAIRMAN. This is a public hearing on House bill No. 26688, and notices have been sent out to all persons who it was believed were interested. I have not yet been advised of all the interests present, but Mr. McFarland is here representing the American Civic Association, who is desirous of being heard at an early hour in order to leave for New York.

I may say at the beginning that it is rumored the Legislature of New York yesterday passed a joint resolution asking that this hearing be deferred until the State of New York can be represented. I am not advised officially that such action has been taken by the legislature, but I would welcome such action. Nevertheless, it seems proper, since so many gentlemen are in the city to-day who desire to be heard, that we go on with this hearing, and then we can postpone it and await the action of the State of New York, if any is taken. It would be very easy to give further hearings if the State of New York desires to be represented.

Mr. McFarland, we will be glad to hear from you. Perhaps you had better take that end of the table [indicating].

Mr. MCFARLAND. Mr. Chairman—

The CHAIRMAN. Just one moment. There has just been handed me this notice:

STATE OF NEW YORK.

IN SENATE, ALBANY, JANUARY 4, 1911.

By M. BURD:

Resolved (if the assembly concur). That the clerk of the senate be directed to communicate with the proper committee of the House of Representatives through its chairman, and request that no final action be taken by such committee on the proposed bill now before it, known as the Alexander electric power bill, until the New York State authorities have an opportunity to examine its provisions and be heard thereon.

By order of the senate:

PATRICK E. McCABE, *Clerk.*

In assembly, January 4, 1911. Concurred in without amendment.

By order of the assembly:

LUKE MCHENRY, *Clerk.*

Certainly there will be no positive action taken by this committee until the State of New York can be heard, and, as I stated before, I welcome that action on the part of the State.

✓ Mr. McFARLAND. Mr. Chairman, in being permitted to discuss this subject at this time I do so hoping that the same policy is being pursued as that which the then Secretary of War Taft approved at the first hearing about Niagara Falls in relation to the distribution of water power under the Burton bill. Mr. Taft at that time assumed that inasmuch the American Civic Association represented the public it was proper that it should be first heard.

The policy of the United States in respect of the control of the waters of the Niagara River at and about Niagara Falls has been consistent since the act of 1905. The association which I have the honor to represent and other organizations called the attention of the Federal Government to its possibilities and its powers. Mr. Roosevelt, in response to an urgent request, recommended to the Congress the nationalization of Niagara Falls, which at that time was taken by the country at large, and certainly legally construed, as the possession of the State of New York. The Congress followed the suggestion of the President, and as a result of conference the Burton bill was passed, that bill being the direct lineal predecessor of the enactment before the committee to-day. Not only was Mr. Roosevelt interested in this, as is his able successor, the present President, Mr. Taft, both as Secretary of War and now as President, but they have shown themselves alive and interested in Niagara Falls as a spectacle; that is, in Niagara Falls as a world possession.

Mr. Roosevelt, under date of March 1, 1906, transmitted a report of the American members of the International Waterways Commission, in which occurred this sentence, referring to the power development at Niagara:

Whether this commercial asset shall be utilized to such an extent as to seriously impair the majesty and scenic beauty of the Falls, depends upon the public will.

That absolutely and fairly stated the situation at that time. The public has spoken; it has spoken in unmistakable terms in every State and Territory, in every city and hamlet. It has spoken by the thousand, by the ten thousands; it has spoken through the newspapers and through associations and societies; it has most effectually made known its position; that is, that the majesty and scenic beauty of the Falls shall not be impaired.

The Burton bill, which was signed by President Roosevelt on June 29, 1906, endeavored to establish a fair line between private investments in power development at Niagara Falls and the public investment in the glory of Niagara.

This Burton bill distinctly limited the diversion which might be made for power at 15,600 cubic feet per second. But this committee and the public will take into consideration the fact that the glory of Niagara Falls does not alone depend upon the diversion of waters by the two companies on the American side, but that it very much more depends upon the larger privileges on the Canadian side. It was thoroughly understood that, while the United States had absolutely no control over what the Province of Ontario should choose to do

on that side of the Niagara, it did have control over that portion of the results of such diversion of water as might be transmitted into the United States in the shape of electric power; and, therefore, the terms of the Burton bill included a limitation on the importation of power from Canada into the United States. It was definitely understood then and is now that electric horsepower used in the United States primarily resolves itself into water abstracted from the Niagara River.

When I had the honor to accompany Mr. Taft about Niagara Falls in 1906, when as Secretary of War he was acting under the provisions of the Burton bill, he was made cognizant of the fact that the boundary line does not end at Goat Island; that it lies well beyond Goat Island.

As is well known, Canada is a relatively undeveloped country. I do not know how the situation is now, but five years ago it had a population of $1\frac{1}{2}$ to the square mile, while the United States had a population of 21 to the square mile. It is obviously impossible for the Province of Ontario to use among its own people all the power possible to produce from the utilization of the works already begun on the Canadian side of Niagara Falls. The market for that power is obviously in the United States, and corporations exist to bring in that power and develop it. They now bring it in and develop it in strict accordance with the terms of the Burton bill, limiting and reducing as far as possible the final drain on the Falls. It was insisted at the hearing that the Government through its Army engineers should discover how much water could be diverted from Niagara Falls without seriously injuring its integrity as a great spectacle. The bill provided that no further permits beyond 15,600 cubic feet per second should be issued or granted until after six months of the full use an opportunity had been given to discover the effect of the primary diversions.

Under that provision of the Burton act the War Department has been making careful surveys of the situation for a long time to discover the effect of these diversions. It has reported, and in that report, made in 1909, page 940, the details are given. I will not take the time of the committee by reading the report in extenso. I will give, and I ask your earnest attention to it, the conclusions arrived at by the Chief of Engineers—that the Falls have unquestionably been injured by the diversions that have been already made and that additional diversions now underway will add to the damage:

The combined lowering tends to uncover shallow portions of the crest line of the American Falls. It is further accompanied by greater and, consequently, more harmful effects both in the American rapids and at the easterly, or Terrapin Point, end of the Horseshoe Falls. Terrapin Point is on the New York side of the boundary and, as depths there are naturally slight, the loss of 2.5 inches in depth, which is the total due to all existing diversions, is a matter of moment in its relation to continuity of crest line. But it is on the Canadian side of the boundary that the impairment of the Falls is most serious.

At the Canadian end of the Horseshoe Falls, which is known to be deficient in depth, the diversion of 15,100 cubic feet per second produces a lowering of about 4.8 inches, which is increased to 8.44 inches by the present diversions of the Ontario Power Co., the Electrical Development Co., the Canadian Niagara Power Co., and the International Railway Co., whose total diversion is now estimated at 10,950 cubic feet per second. The losses at Terrapin Point and at the west end of the Horseshoe are relatively great, and, as a whole, the Falls have unquestionably been seriously injured by the diversions already made. Additional diversions now under way will add to the damage.

Mr. EDWARDS. Does that refer to privileges granted by the United States or Canada?

Mr. McFARLAND. By both.

Mr. MADDEN. What report is that?

Mr. McFARLAND. It is the annual report of the Chief of Engineers for 1909.

Mr. YOUNG. Who makes that report?

Mr. McFARLAND. It is made by that officer.

Mr. YOUNG. To whom is the report made?

Mr. McFARLAND. It is his annual report to the Secretary of War. The report takes up fully the result of diversions on both sides. It surveys the whole situation with reference to diversions and to the admission of power from the Canadian side.

Mr. MADDEN. How much water has been diverted?

Mr. McFARLAND. The report mentions a little over 26,000 cubic feet per second.

Mr. MADDEN. How many thousand feet go over the Falls?

Mr. McFARLAND. Two hundred and twenty-two thousand four hundred cubic feet is supposed to be the average amount.

Mr. MADDEN. How many thousand cubic feet per second could be taken away without interfering with the scenic effect?

Mr. McFARLAND. If I knew that, I would be a very wise man.

Mr. MADDEN. Does anybody know?

Mr. McFARLAND. No, sir. The only pretense in that direction has been arrived at by the surveys of engineers.

Mr. MADDEN. How do they reach that conclusion?

Mr. McFARLAND. By taking measurements, by photographs, and by the methods that engineers usually reach conclusions.

Mr. MADDEN. Would a wise layman be able to determine what effect the diversion of the waters would have on the scenic grandeur of the Falls?

Mr. McFARLAND. It would be a wise layman who would qualify for that.

Mr. MADDEN. Then you do not believe they would be able to reach a conclusion about it?

Mr. McFARLAND. I do not believe they could reach an absolutely right conclusion. Scenic effect can not be stated in mathematical terms; it can be stated only in general terms.

Mr. MADDEN. Then your argument is not based on mathematical calculations, but on a theory.

Mr. McFARLAND. My argument is not based on generalities. A statement as to scenic injury may be based on mathematical calculation.

Mr. MADDEN. You believe that a conclusion can be reached exactly, do you?

Mr. McFARLAND. Yes, sir.

Mr. MADDEN. We are trying to get at the facts so that we can base conclusions on your argument.

Mr. McFARLAND. If anyone could take a view or scenic effect and state it in mathematical terms, it would be a very wonderful thing.

Mr. MADDEN. What do you base your argument on as to the diversion of water?

Mr. McFARLAND. I base it upon the statement here made, which certainly checks with my own observation, that the Falls have been

unquestionably injured by the diversions already made and that diversions under way will add to the damage.

Mr. MADDEN. What injury has been done to them, in your judgment?

Mr. McFARLAND. Injury has been done by the withdrawal of water.

Mr. MADDEN. What effect has that had upon the Falls? What is the injury?

Mr. McFARLAND. The injury is in reducing the volume of water that passes over the crest of the Falls. The smallest abstraction of water from the varied and ragged crest line, even half an inch, might bare a great quantity of rock. Much of the rock has been bared, so it is said by engineers, and in that way the grandeur of the Falls has been interfered with.

Mr. MADDEN. Suppose you were to go to Niagara Falls to-day and between now and six months from to-day 10,000 feet of water per second was diverted, do you suppose, as a layman, you would be able to see any difference in the Falls as they are to-day and as they would be six months from to-day?

Mr. McFARLAND. I think I would. The water is exceedingly low by the Terrapin Rock, and I think an abstraction of 10,000 feet, or the withdrawal of 10,000 feet, would bare a large extent there.

Mr. YOUNG. You say the engineer has been able to determine how much the crest line has been lowered?

Mr. McFARLAND. Yes, sir; I think I can show you that right now.

Mr. YOUNG. Does he say how much the crest line has been lowered?

Mr. McFARLAND. Yes, sir; 2.5 inches, as the effect of the diversions, according to this engineer [referring to report].

Mr. YOUNG. What proportion is that?

Mr. McFARLAND. I do not know; the crest line is so uneven. The crest line of the Horseshoe Falls is approximately 500 feet less than it was 10 years ago.

Mr. MADDEN. Is that caused by the diversion of water?

Mr. McFARLAND. My opinion is that it has been affected by it. On the American side, at the time I speak of, it was supposed that there flowed about 10 per cent of the water, but the present estimate of the engineers is that much less than 10 per cent flows on the American side. The parting of the waters occurs at the head of Goat Island, and on the American side below that point there are two companies developing power under permits from the State of New York, and one of them, I believe, takes water from above the parting of the waters. On the Canadian side but one company takes water from the full breadth of the river above the parting of the waters: that is the Ontario Power Co. The others are below the parting of the waters.

Mr. EDWARDS. Have you a map of the Falls?

Mr. McFARLAND. No, sir.

Mr. MADDEN. Is your argument for the conservation of the natural resources of the country; do you believe in conservation?

Mr. McFARLAND. I would be glad, if time permitted, to properly argue that question. Saving Niagara would be a conservation of resources for the benefit of the future; destroying its scenic effect would utterly disregard an enormous source of wealth.

Mr. MADDEN. I assume that if such development was made it would be based on equity and justice, and in the interest of the American people.

Mr. McFARLAND. That is a pretty large assumption.

Mr. MADDEN. It is fair to assume that; just as fair as it is to assume that it is for the benefit of the future. You make an assumption in making that statement.

Mr. McFARLAND. I am not making any assumption at all. All the revenue from developing power goes to the benefit of the stockholders of the companies developing it.

Mr. MADDEN. Does the State receive any revenue at all?

Mr. McFARLAND. Not one cent; nor does the Federal Government. Viewing the matter from the economic standpoint, we should take into consideration the fact that the Falls attract an enormous amount of travel, and the increment from that source is much more widely distributed than it would be from the production of electric power.

Mr. YOUNG. You made the statement a few moments ago that the Falls belonged to the people of the United States. Upon what do you base that statement?

Mr. McFARLAND. I base that statement upon the fact that the Niagara Falls occur in an international boundary stream, and I cite for you the opinions of ex-Attorney General John W. Griggs, and of ex-Attorney General Moody, and refer you to Hon. Elihu Root.

Mr. YOUNG. Is it not a fact that the courts have determined that time after time, that the submerged land under an international boundary stream of the United States belongs to the adjoining State and not to the United States? Was not that point decided by the court of appeals of the State of New York and by the Supreme Court of the United States, and that the only control the United States has over the matter is in effecting navigation, or, where it is an international boundary, for its protection as a bulwark or a fort, as you might say? That is the only control the United States has over it.

Mr. McFARLAND. I do not have at this moment the very able statement of Gen. Griggs.

Mr. YOUNG. I think you will find that it goes no further than I have stated.

Mr. McFARLAND. It specifically states that the United States has paramount jurisdiction; because, first, it is a navigable river, and, second, because it is an international boundary.

Mr. YOUNG. But that gives no ownership, except as a matter of control, so far as may be necessary to effect these two purposes.

Mr. McFARLAND. May I ask you who you would consider to be the owner?

Mr. YOUNG. I think unquestionably the ownership is in the State of New York so far as that portion is concerned which lies on the American side of the international boundary.

Mr. McFARLAND. Why, then, has the State of New York permitted its grants to be set aside by Federal enactments?

Mr. YOUNG. That was simply to the extent to which the United States attempted their preservation. This may be theoretical, but the theory on which we were acting was that this is an international boundary, an international defense, the same as a fort, and the Government to that extent had a right to control it. I am familiar with the Burton act.

Mr. McFARLAND. That act is "for the control and regulation of the waters of Niagara River, for the preservation of Niagara Falls, and for other purposes." Now, if an act can remain in force for four,

five, or six years for the preservation of Niagara Falls, is it not fair to assume that Congress has taken up that question? I would further call your attention to section 2 of that act, providing for such regulation and control of Niagara River and its tributaries as will "not injure or interfere with * * * the scenic grandeur of Niagara Falls." I insist, therefore, that Congress has attempted to preserve the scenery, and I might state to you a great many other instances to the same effect; the Federal Government has certainly done so in establishing national parks.

Mr. YOUNG. That is national property, owned by the Government.

Mr. MADDEN. Is it your contention that the Federal Government has power and authority over the Falls for the purpose of preserving their scenic grandeur?

Mr. MCFARLAND. It is.

Mr. MADDEN. What amount of diversion has been taken from there, approximately?

Mr. MCFARLAND. The limit of the treaty with Canada is 56,000 cubic feet per second.

Mr. MADDEN. That is the authorized diversion; I want to know, approximately, the actual diversion.

Mr. MCFARLAND. The only persons who could give you that accurately would be the engineers.

Mr. MADDEN. Have they made their statements public?

Mr. MCFARLAND. I have not seen the statement of the Army engineers. I am told by Mr. Lovelace, who is here, that the total diversion authorized by the Burton bill (on the American side) is now being used; it is 15,600 cubic feet per second. The balance of 36,000 cubic feet on the Canadian side Gen. Greene can tell you about.

Gen. GREENE. About one-half.

Mr. MADDEN. I think it is safe to assume that Congress will not do anything to mar the scenic beauty of Niagara; what I want to know is the amount of water diverted.

Mr. MCFARLAND. I am informed that the diversion authorized on the American side, of 15,600 cubic feet, is practically accomplished, and Gen. Greene states that of the authorized diversion on the Canadian side about one-half has been accomplished. The ultimate authorizations under the treaty are 56,000 cubic feet per second, and the Army engineer whose words I read to you a moment ago says that at the present the Falls have been damaged, and that the additional diversions now under way will add to the damage. That is the best statement I can make as to the actual facts of the case.

I want to say that the bill under your present consideration is not for the protection of Niagara Falls. It assumes to amend sections 2, 3, and 5 of the Burton bill. It changes section 2 so that the Secretary of War is authorized to grant permits "to individuals, companies, or corporations which are now actually producing power," and it extends the aggregate daily diversions to 20,000 cubic feet per second. This is perilously close to a direction to the Secretary of War to issue the permits. Then this bill before you also does not take any cognizance whatever of the admission of power from Canada. My impression is that if this bill becomes a law there will be absolutely no check whatever on the admission of power from Canada, and that the full 36,000 cubic feet per second possible within the limitation of the

treaty will be promptly developed and the current brought into the United States. The bill is not for the protection of Niagara Falls at all. The bill as drawn disregards the intent clearly expressed in the title and in section 2 of the Burton bill.

Mr. MOON. How many corporations are now withdrawing water from Niagara?

Mr. McFARLAND. Five or six.

Mr. MOON. Does this bill extend to new corporations or to the old corporations?

Mr. McFARLAND. It extends only to those "now actually producing power." On the Canadian side there are two companies that have distributing companies on the American side. This bill confines the additional diversion to be authorized to the present two American companies.

Mr. CASSIDY. Is it probable that application will be made for additional power works, so that that power authorized may be given to some new company?

Mr. McFARLAND. I think it would be probable, considering the pressure for additional works on the American side, and I know there will be presented to you to-day a project for a new one which would cause the diversion of much additional water. The question has been extensively discussed about the city of Niagara Falls. I am not interested in the distribution of the loaves and fishes as the result of this bill.

Mr. MADDEN. Do you suppose that the people who drew up this treaty that exists between this country and Great Britain had in mind the preservation of the scenic beauty of Niagara Falls when they fixed that quantity of diversions at 56,000 cubic feet per second?

Mr. McFARLAND. I am in a position to answer that definitely, because I know that Mr. Bryce and Mr. Root were exceedingly interested in the preservation of the Falls. Mr. Bryce said that if he only had two weeks in Canada as a private citizen he would be able to accomplish something. The Canadians are much concerned about what they call the "white coal" of Niagara. The Province of Ontario does not have a good supply of coal, and they rely upon Niagara as their source of power for light and heat; they are not in favor of the preservation of Niagara Falls—there is no question about that. The Canadian Government commission distributes electric power to the cities at low rates in Canada; they can buy electric power and light for about one-half of the cost on the American side.

Mr. MOON. What is it selling for on the American side?

Mr. McFARLAND. I do not know the present rate; the last rate I have heard was \$12. The rate is much less in Canada than the same rate in the United States. I am not qualified—I am not posted—as to the rate on the American side. The Canadian ultimate consumer gets his power at the cost of distribution only, after the wholesale price has been paid at the power house; the ultimate consumer on the American side gets his plus the cost of distribution and several other pluses.

Mr. LAWRENCE. He does not get any tariff on it?

Mr. McFARLAND. No, sir; except the tariff of the corporation.

Mr. MADDEN. I think we are getting away from the question. I asked the question whether the commissioners who drew the treaty had in mind the preservation of the scenic beauty of the Falls.

MR. MCFARLAND. I mentioned what Mr. Bryce said on the subject and also that Mr. Root was very much interested. After the treaty had been negotiated, but before it had been ratified by either Government, and when it was possible that it might not be ratified by the United States Senate, Mr. Root said to me that he had tried his best to get concessions from the Canadian Government and that he had given up everything to save Niagara Falls.

MR. MADDEN. Do you suppose they contemplated when they drew the treaty the use and diversion of all the water provided for diversion under the treaty?

MR. MCFARLAND. NO: I feel sure the amounts named were intended only as a final and outside limitation.

MR. YOUNG. The Canadian companies could not be interested in increasing the amount of the diversions on the American side; that could not have been a concession to Canada; that was a concession to the United States.

MR. MCFARLAND. I think that both Governments must have been interested.

MR. YOUNG. AS I understand from your statement, the American commissioners did not increase this amount because they thought it proper to do so, but as a concession to Canada. How can Canada be interested in increasing the amount of water that can be used on the American side while she gets no increase in the amount that can be used on the Canadian side?

MR. MCFARLAND. I do not think she is interested in it.

MR. YOUNG. Your statement, as I understand it, was that this increase from 15,600 cubic feet per second to 20,000 cubic feet was made by the American commissioners, not because they believed it ought to be made, but as a concession to Canada.

MR. MCFARLAND. I did not intend to make that statement at all.

MR. YOUNG. Then why did the American commissioners consent to an increase of the amount which might be diverted on the American side if they had in view the desirability of maintaining the scenic beauty of the Falls?

MR. MCFARLAND. Without reading the entire document, let me say that the Burton bill authorized the diversion of 15,600 cubic feet per second. Under the Burton bill the Secretary of War was authorized to issue, not sooner than six months after the full 15,600 feet had been used, additional revocable permits up "to such amount, if any, as, in connection with the amount diverted on the Canadian side, shall not injure or interfere with the navigable capacity of said river, or its integrity and proper volume as a boundary stream, or the scenic grandeur of Niagara Falls."

When the treaty was being considered, the report I have read in your hearing by the Chief of Engineers had not been made, and the authorities did not have information as to whether it would be safe to allow this additional amount of diversion. The 4,400 feet extra in the treaty was in the nature of a margin.

MR. MADDEN. AS I understand your statement, at the time the treaty was being negotiated, the commissioners did not have the benefit of the report of the Chief of Engineers.

MR. MCFARLAND. NO, SIR.

MR. MOON. AS I understand it, your contention is that the Government, having the right to give away 20,000 cubic feet per second

and dispose of it as it shall see fit, and having already exercised that right to the extent of 15,600 feet to two privileged corporations, they should not give more to these privileged corporations?

Mr. McFARLAND. My contention is to limit the quantity to that provided in the Burton bill; in other words, it is not necessary to give this water away now. It can be given away at any time, but it can not be recovered. No gentleman would insist that after the water has been once used or diverted and expenditures made that it could ever be recovered.

Mr. MOON. That would depend on the conditions under which it is taken.

Mr. McFARLAND. In the progress of electrical science, unquestionably more power can be developed from the water to be diverted under the permits. Hydraulic engineers have advanced in knowledge. The Canadian branch of the Niagara Falls Power Co. has recently installed a new turbine, under which, as the facts are given in the *Electrical World* of December 29, 1910, 25 per cent increased capacity has been obtained from the same amount of water.

Mr. MADDEN. They have taken out the turbines in Chicago.

Mr. McFARLAND. I do not fancy that any of the companies at Niagara Falls will soon take out their turbines.

Mr. MADDEN. I do not understand one statement you made; do I understand you to contend that you want the American Congress to refuse to allow Canada to increase the diversion of waters?

Mr. McFARLAND. Not at all. My statement was to this purport: That the Congress refuse to admit electrical power, or additional electrical power, from Canada, and thus by indirection control the diversion of water on the Canadian side.

Mr. MADDEN. Would you ask us to refuse to allow power generated in Canada to be used in the United States?

Mr. McFARLAND. Unquestionably. We have so refused within the limits of the Burton bill; the law as it stands to-day limits, and limits sharply, the amount of current that can be brought into the United States, and I want that limitation to be allowed to stand as it is.

Mr. MADDEN. I understood you to say that one-half of the authorized diversions is being used on the Canadian side.

Mr. McFARLAND. You understood Gen. Greene to say that only about one-half of the authorized power on the Canadian side had been developed. All that is authorized on the American side has been developed.

Mr. MADDEN. Your request, then, is that this committee to recommend that Congress refuse to permit any of the power developed by the companies in Canada to be sent into the United States.

Mr. McFARLAND. In effect, but not in fact. The power is distributed by American firms in the United States; no power is distributed on American territory by the Canadian companies. The power is produced there and delivered to transmission companies and it is distributed in the United States by American companies.

Mr. MADDEN. What you want us to do is to refuse to allow transmission companies to deliver power produced in Canada in the United States?

Mr. McFARLAND. Yes, sir; not beyond the power now authorized.

Mr. CASSIDY. What proportion of the amount of Canadian power authorized to come into the United States is now coming in?

Mr. McFARLAND. I do not know; Gen. Greene could give that information.

Mr. CASSIDY (to Gen. Greene). What proportion of the amount now authorized to be brought in is being brought into the United States?

Gen. GREENE. About three-fourths. Of the total of 160,000 horsepower authorized by the Burton bill, I think about 110,000 or 115,000 is now being brought into the United States.

STATEMENT OF GEN. FRANCIS V. GREENE.

Gen. GREENE. Our proposition is that the treaty, recently proclaimed by the President between Great Britain and the United States in regard to the boundary waters, is the supreme law of the land, and that that has settled the questions involved; concerning which Mr. McFarland has argued at great length.

In the diversion of water on the American side we are not interested.

I think it proper to say what companies I represent. I represent the Niagara, Lockport & Ontario Power Co., a New York corporation, of which I am president, which distributes power throughout western New York, from Oswego, through Syracuse, Auburn, Rochester, Batavia, Lockport, the vicinity of Buffalo, and Dunkirk. I also represent a Canadian corporation, the Ontario Power Co., of which I am vice president, which generates power on the Canadian side and sells it to the other corporation. The stockholders of these two corporations are entirely separate, except that a few of the stockholders in one corporation are also stockholders in the other; but there is no control of one corporation over the other. They are entirely independent. We do not divert any water on the American side and, therefore, I have nothing to say on that part of the question. We do import or transmit power from Canada for the benefit of people in western New York, and we sell it as other commercial corporations do—at a profit, but at a very small profit.

The Government of Canada, or the Dominion of Canada, has the same jurisdiction over navigable streams that the United States has. The Province of Ontario is the riparian owner at Niagara Falls on the Canadian side. It owns, with slight exceptions, the entire river bank from Lake Erie to Lake Ontario.

In the vicinity of Niagara Falls it owns a strip nearly one-half a mile wide which it has converted into a public park, under the name of the Queen Victoria Niagara Falls Park, and the park commission, representing the Ontario Province (not the Dominion of Canada) as riparian owner, has made contracts with three power companies, occupying the relation of landlord and tenant. These contracts provide that by way of rental the power companies shall pay a certain amount of money annually to the park commissioners, and that money has furnished the funds with which they have made a very handsome park. This money is paid by the companies not for a franchise or any general right, but simply for the occupation of land on which no taxes are paid. Not only are no taxes paid on

the land, but there are no taxes paid on the improvements. This money paid to the Ontario Government is for the use of the land. The Dominion Government, under the act of 1867, known as the "confederation act," which corresponds in some measure to our Constitution, in that it defines the relations between the Dominion and the various Provinces comprising the Dominion, claims and exercises the right to control the export of this power from Canada, and it annually grants a license to export certain amounts of power by the companies that generate it in Canada, and if there is any export of power without such license there is a very heavy penalty by way of fine or imprisonment; so that the control of the export of power is entirely in the Dominion Government, but the ownership of the land is in the Province.

Now, Mr. McFarland has stated that the coal resources of Ontario are slight. They are nothing; they have no coal in Ontario, and they look to Niagara as the source of power and development for the Province of Ontario. The contracts under which the power companies in Canada occupy this tract of land provide that one-half of the power can be exported to the United States, and I do not think that any more will ever be allowed to come out.

The CHAIRMAN. Do you mean the contract with the Province? The Dominion Government has control over the exports.

Gen. GREENE. That is true; but they are very careful not to destroy vested rights in Canada. Of course the Dominion of Canada could prohibit the export entirely, if they should see fit to do so, but it would amount to confiscation, and I do not think that probable. Now, under these circumstances, the treaty having decided how much water can be diverted on the Canada side, and the Province having made contracts under which one-half of the power made by it may come to the United States, the United States should have the benefit of it, and that is all that we are interested in, viz. that the restrictions made by the Burton bill, under which only 160,000 horsepower can be transmitted to the United States, shall be wiped out.

Further, in this connection I wish to call attention to the somewhat unique position of the Canadian company for which I speak (namely, the Ontario Power Co.) with respect to the right of exporting power into the United States. The Ontario Power Co. has a Dominion charter; all the other Canadian power companies developing power at Niagara Falls have provincial charters only. The Dominion charter of the Ontario Power Co. contains the following grant of powers:

The said company are hereby empowered, by means of and through the works aforesaid, to supply manufacturers, corporations, and persons with water, hydraulic, electric, or other power, for use in manufacturing or any other business or purpose, and by means of cables, machinery, and other appliances, and at such rates and upon such conditions as may be agreed upon between the said company and such manufacturers, corporations, or persons; and the said company shall have full power and authority to contract in writing with any company which may have heretofore erected, or which may hereafter erect, a bridge across the Niagara River, for permission, upon such terms as may be agreed upon, to carry one or more wires for electric light or other purposes upon and over the said bridge toward the United States shore of the Niagara River, and to connect the same, or any other wires or cables which the company may lay across the said river, with the wires of any electric light company or other company in the United States, and may also contract with such company to work the said electric light or other power jointly.

The validity of this grant has been passed upon and expressly upheld by the Supreme Court of Canada in the case of *William Hewson v. The Ontario Power Co.* reported in volume 36, Supreme Court records (Canada) at page 596. The chief justice in opinion in this case (p. 604), referring to the Ontario Power Co., says: "It may, if it pleases, do business only in the United States, not at all in Ontario." The Dominion Government, therefore, has made a perfectly valid contract with the Ontario Power Co., granting it the right to transmit and sell its product in the United States.

After obtaining our Dominion charter, we made the contract before referred to with the Province of Ontario, agreeing that we would reserve one-half of our product for sale in Canada, the province expressly agreeing that we could dispose of the other half in the United States. Thus, the Ontario Power Co. has contracts with the Dominion and provincial governments, granting it the right to export at least one-half of its product; and upon the faith of these contracts its enormous property has been created and its securities sold. Under these circumstances, it is not thought that the Dominion Government will enact any law which will violate or destroy this company's right to export power as fixed by these contracts. This company, as stated, enjoys the unique position of having both the Dominion and provincial governments committed to its right to export power from Canada into the United States; and our Government, we believe, should facilitate the importation of all that the Canadian Government in any wise permits to be exported.

The CHAIRMAN. At the time the Burton bill was formulated there was no power on the part of anybody to control the amount of water that might be taken from the Canadian side. Hence, I assume that is the reason why a limitation as to importation was inserted.

Gen. GREENE. Now, our contention is that the people of the United States should be permitted to use the power created by this water, as authorized by the treaty, to the extent that Canada will allow the power to come in: that is, so far as the United States is concerned, it should impose no restrictions thereon. For that reason we take an opposite view of the matter from Mr. McFarland.

Mr. CASSIDY. What amount of horsepower is generated per cubic foot?

Gen. GREENE. The Ontario Power Co. gets about 15½ horsepower per cubic foot; the Canadian Niagara Power Co. and the Electrical Development Co. about 11 horsepower per cubic foot.

Mr. McFarland has exhibited a photograph of the Falls in winter—I do not remember of what year, and I do not know whether he intended to convey an impression that this view of the Falls was taken before the power companies were developed or not. Fifty years ago, before any power companies were there, people once walked across the rocks above the American Falls. This condition is liable to happen in any winter when the wind is in the right direction and the thermometer is below zero.

If it had not been for the failure of the express company, I would have had several photographs here to show the committee.

The CHAIRMAN. Have you copies with which to supply the committee?

Gen. GREENE. I will have a supply sent to the clerk of the committee.

Mr. McFarland read an extract from the report of the Chief of Engineers. He did not read that portion of the report which says that the diversion of the full amount of water by the American power companies will lower the crest of the American Falls by only three-eighths of an inch. (Annual Report of the Chief of Engineers, U. S. Army, for 1909, p. 940.) In order that everyone can examine for himself just what the Government engineers have said, I will append to my statement a complete copy of what is said about Niagara Falls in the reports of the Chief of Engineers and of Majors Keller and Riché for 1909 and 1910.¹

Mr. McFarland has also stated that "the crest line of the Horse-shoe Falls is approximately 500 feet less than it was 10 years ago;" and when asked, "Is that caused by the diversion of water?" he replied, "My opinion is that it has been affected by it."

The facts are these: Before there was a park or a power house there, there was a depression in the ground west of Niagara River through which a small amount of water passed and trickled over the rocks at the extreme western end of the Canadian Falls. When the wind was from the east there was no water over it, but when the wind was from the west the water trickled over it. The park commissioners considered that a very unsightly part of the Falls and built a sidewalk and parapet wall on that ledge of rock, right over the brink, so that visitors could get a good view of the Falls. This change was made by the park commissioners without consulting any power company; it was made to improve the appearance and accessibility of the Falls, and not to injure them; and the diversion of water had nothing to do with it.

The CHAIRMAN. These remarks are being taken stenographically and can be enlarged, there and revised.

Gen. GREENE. There is another matter I would like to call to the attention of the committee: The boundary line is not in the deep water on the Canadian side. I refer Mr. McFarland to the report of the waterways commission. He will find that the boundary line is in shallow water close to Goat Island.

There is one thing that is bound to come up here—I do not know that I should anticipate it—that is, the amount of power per cubic foot of water which the different companies develop. But other people here, I am sure, are going to talk to you about that, and I would rather stick to the things that I am really interested in, and that is to get this power, so far as Canada will let it come into the United States; bring it in here for the use of our people.

Mr. MADDEN. This bill provides that the grant of authority to bring the power in shall be limited to the existing companies.

Gen. GREENE. I do not so read it. I do not think the bill as I have read it says anything about bringing the power into the United States at all.

Mr. MADDEN. It deals with existing companies only.

Gen. GREENE. Only as to the diversion of water, so far as I read it.

Mr. MADDEN. Do you think that the power granted in the bill for the diversion of water should be limited to those who are in the water-power business now?

¹ See p. 571.

Gen. GREENE. That is the same question Judge Moon asked me, and I tried to dodge it, because I do not know why I should answer it.

The CHAIRMAN. I might say to the committee that this bill was prepared by the Corps of Engineers along the lines of the Burton bill. It has never been intended by me, as the introducer of the bill, that it would be confined to the existing companies, but that it would be thrown open for the Secretary of War to determine how it should be divided.

Mr. CASSIDY. That is, some other company might make a greater use of the water?

The CHAIRMAN. That is, make this simply an enabling act, so that the additional 4,400 cubic feet a second might be divided by the Secretary of War as he sees fit.

Mr. CASSIDY. Your thought being, as I understand it, that some other company might be able to use a much greater head than these present companies?

The CHAIRMAN. Oh, yes.

Gen. GREENE. Judge Moon has the backing of the chairman, and if he will allow me, I will now answer the question.

Mr. MOON. Yes; with the statement in advance that, notwithstanding the chairman's statement, this act plainly and clearly confines it to the companies.

Gen. GREENE. I think that act should be amended so as to leave it to the discretion of the Secretary of War, if you want my opinion.

Mr. MOON. How is that?

Gen. GREENE. I think the act should be so amended as to leave this in the discretion of the Secretary of War, who undoubtedly will do as his predecessor did—have elaborate hearings, go into the question in all its bearings, get the reports from his own engineers, and will then make his decision, making the greatest use of the water.

Mr. MADDEN. You would be in favor of cutting out the words "which are now actually producing power?"

Gen. GREENE. Absolutely.

Mr. CASSIDY. General, I would like to ask one other question, just as a matter of information: How many miles do you now carry the power?

Gen. GREENE. We carry the power 200 miles now; that is, at 60,000 volts.

Mr. CASSIDY. Is that the extreme limit of the art or industry?

Gen. GREENE. No, sir. We are carrying it at 60,000 volts, which was the limit at the time our lines were built, five years ago. Other companies are now carrying it at 110,000 volts, and some are talking of 150,000 volts. Volts, you understand, are the pressure. The distance it can be carried is approximately proportional to the voltage, so that if we carry it 200 miles successfully at 60,000 volts and it is demonstrated that 120,000 volts are commercially feasible, we will then be able to take it 400 miles.

Mr. MADDEN. Do you get any higher price for your power 100 miles away than you do 10 miles away?

Gen. GREENE. Oh, yes.

Mr. MADDEN. Give us the figures in proportion to the distance, please.

Gen. GREENE. At Syracuse, 160 miles, approximately \$30; at Lockport, \$16, a distance of approximately 18 miles; and between the two roughly proportional to the distance.

Mr. MADDEN. Does it cost the difference between \$16 and \$30 to transmit?

Gen. GREENE. About that.

Mr. MADDEN. What does it cost to develop horsepower by means of coal?

Gen. GREENE. It depends entirely on the number of hours in the day you use it.

Mr. MADDEN. Say, a 10-hour day?

Gen. GREENE. For a 10-hour day it would be about——

Mr. YOUNG. Do you mean at Buffalo?

Gen. GREENE. Based on coal at about \$2?

Mr. MADDEN. Yes; say \$2. Would it cost about \$30?

Gen. GREENE. I should say more. For a 10-hour day I should say about \$30, with the most up-to-date improved apparatus. We sell the power for 24 hours continuously.

Mr. YOUNG. For \$30 and \$16?

Gen. GREENE. Yes, sir.

Mr. YOUNG. So it is very much cheaper than coal?

Gen. GREENE. Oh, yes; there is no question about that. While the rates of fare on the Syracuse cars and the Rochester cars, which are run on our power, are 5 cents, just as they are in New York or Seattle, yet there are a great many more lines built in those two cities, due to this power, than there would be if they had to make their power out of coal, and the public gets the advantage in a greater extension of trolley lines, and in a lower rate for electric lights in their houses, than they would if the power were made out of coal.

Mr. MADDEN. What do they charge them per kilowatt-hour for electric lights in the houses?

Gen. GREENE. My impression is it is 8 cents; in most other cities, 10.

Mr. MADDEN. That is regardless of the quantity of electricity consumed, is it not?

Gen. GREENE. That is for the smallest consumer. The biggest consumer has it very much less than that.

Mr. MADDEN. What does it cost to develop that kilowatt-hour, about 1 cent, or three-quarters of a cent?

Gen. GREENE. You mean the generating station?

Mr. MADDEN. Yes.

Gen. GREENE. I have never figured it out by the kilowatt-hour. I know what it costs per horsepower, for a unit of horsepower, to develop it. It costs about \$95 to \$100 per horsepower, to install.

Mr. MADDEN. I do not quite understand that.

Gen. GREENE. If you have a 100,000-horsepower station at Niagara Falls, you have \$10,000,000 invested.

Mr. MADDEN. You are talking about what it costs to install—the capitalization?

Gen. GREENE. No, I am not talking about capitalization; I am talking about actual cost, money out of pocket.

Mr. MADDEN. Per horsepower?

Gen. GREENE. Yes, sir.

Mr. MADDEN. It would cost you how much, you say, \$95?

Gen. GREENE. \$95 to \$100. If you have 100,000 horsepower, you have spent \$10,000,000 to create it.

Mr. MADDEN. How can you sell that for \$16 or \$30 if it costs you \$95?

Mr. CASSIDY. That is the original cost of the plant.

Mr. MADDEN. I am talking about what it costs to develop, not the plant. I thought I made myself understood. I did not want to know how much money you had invested in your business. I want to know how much it costs you to produce the thing you sell for 8 cents?

Gen. GREENE. We do not sell it for 8 cents.

Mr. MADDEN. Somebody does.

Gen. GREENE. That somebody would have to answer your question. We sell it at 60,000 volts to the public-service corporations.

Mr. MADDEN. They transform it?

Gen. GREENE. They transform it, and have the distribution system throughout the cities, and they collect from the ultimate consumer. I do not know anything about that end of the business. You are evidently familiar with kilowatt-hours. I can tell you how much they pay us per kilowatt-hour.

Mr. MADDEN. All right.

Gen. GREENE. It ranges from 4 to 8 mills.

Mr. YOUNG. But they have to transform it?

Gen. GREENE. They have to transform it and distribute it and maintain their distributing systems. It is an entirely different branch of the business.

Mr. YOUNG. As I understand, Gen. Greene, you represent one of these companies?

Gen. GREENE. I am president of one, vice president of another.

Mr. YOUNG. Which companies?

Gen. GREENE. The Niagara, Lockport & Ontario Power Co., a New York corporation, I am the president of; the Ontario Power Co., of Niagara Falls, a Canadian corporation, I am vice president of; and those two companies have the relation of buyer and seller of power. The Ontario Power Co. generates and sells to the Niagara-Lockport Co.

Mr. YOUNG. And about what proportion of the power now generated there do you generate, your company?

Gen. GREENE. Our last load report showed, I think, 76,000 or 78,000 horsepower generated on the Canadian side, and I think Mr. Lovelace's company shows about 53,500, and the third company perhaps 35,000, or at the most 40,000. I can not speak as accurately for them as I can for myself, of course.

Mr. MADDEN. One hundred and seventy-five thousand?

Gen. GREENE. About that. If this treaty is carried into effect and the companies on the Canadian side use this 36,000 feet per second—

Mr. YOUNG. You say they do use it?

Gen. GREENE. I say "if." You have figured up the amount at the present time, and I was going to anticipate your question of what there would be if the whole amount of water on the Canadian side were used. In that event the Canadian Niagara would generate

110,000; the Electrical Development Co., 125,000; and we, 180,000, or about 415,000. In other words, one hundred and seventy-odd thousand is now being used, with a possibility of 415,000.

Mr. LAWRENCE. That is, under legislation as it now exists you could develop that amount, 415,000 horsepower?

Gen. GREENE. Could develop that amount, but we could not bring it into the United States under the legislation as it now exists.

Mr. LAWRENCE. How much could you bring into the United States under legislation as it now exists?

Gen. GREENE. One hundred and sixty thousand; that is the limit of the Burton bill.

Mr. EDWARDS. Are you equipped to develop more than the 160,000 now?

Gen. GREENE. The companies are all enlarging their works. We are just finishing a very considerable enlargement of ours, and the Canadian Niagara has just installed a new unit; the Electrical Development Co., I understand, is placing orders for one or more additional units. The development goes on as the market increases, either in Canada or in the United States.

Mr. LAWRENCE. What I wanted to get at by my former question was, how much additional power can be brought in from Canada under existing legislation than is now being used of that 160,000?

Gen. GREENE. Of the 160,000 now authorized—I previously stated one company has not availed itself of its privileges. It has a permit for 46,000 horsepower, but it has never been utilized. The other two companies, which have permits for 112,000, have utilized practically the whole of their permits.

Mr. EDWARDS. Is there any provision in that permit to this company that has not utilized its franchise or permit to the effect that if it fails to exercise its rights, its charter is to be forfeited, or anything of that kind?

Gen. GREENE. No, sir.

Mr. MADDEN. General, is there anything in this bill, any reference whatever, to the importation of electrical power from the Canadian side to the American side?

Gen. GREENE. I do not find it as I read it.

Mr. MADDEN. Then why are we talking about the importation of power?

Gen. GREENE. Because there is a law at the present time which distinctly limits it.

Mr. MADDEN. But the bill that is before this committee only provides—

Gen. GREENE. It amends the law.

Mr. MADDEN. This bill provides that authority shall be given to the existing companies to develop the water power that can be developed by the diversion of the unappropriated power authorized under the treaty, the difference between 15,600 and 20,000—4,400 feet a second; is that not what the bill provides?

Gen. GREENE. Yes, sir; but by its silence, as it amends the Burton bill, which does restrict the transmission of power from Canada, that bill changes existing law.

Mr. MADDEN. Do you mean to say that the silence of this bill on the matter referred to in the Burton bill changes the conditions that exist under the Burton bill?

Gen. GREENE. Yes, sir; because there was never any restriction until the Burton bill was enacted into law.

Mr. LAWRENCE. In other words, if we figure under this bill 20,000, we can take so much less power from Canada. If you increase the diversion on the American side, you can take so much less from Canada?

Gen. GREENE. I do not see that.

The CHAIRMAN. The amendment in this bill simply takes away any limitation heretofore existing under the Burton bill.

Mr. MADDEN. Lifts the limitation.

The CHAIRMAN. In other words, it lets in all the power that Canada will allow to come.

Mr. CASSIDY. That would be about 47,000 additional horsepower, as I understand it?

Gen. GREENE. About 47,000 or 50,000 additional to what the Burton bill permits.

Mr. CASSIDY. That is what I mean, in addition to the 160,000; 47,000 additional.

Gen. GREENE. It lets in nearly double what is coming in with the two companies exercising their full rights and the third company doing nothing.

Mr. CASSIDY. There are some companies now ready and willing to take up, say, that 46,500, or an equivalent amount?

Gen. GREENE. Ready to transmit it into the United States?

Mr. CASSIDY. Yes.

Gen. GREENE. Yes, sir.

Mr. CASSIDY. But this one company does not exercise it?

Gen. GREENE. No, sir.

Mr. CASSIDY. What is the reason for that?

Gen. GREENE. It is a very expensive thing to build transmission lines.

Mr. CASSIDY. Has an effort been made to transfer that power, to bring it in from that company to some other company?

Gen. GREENE. Not that I know of.

Mr. MADDEN. Who controls this company?

Gen. GREENE. Canadians.

Mr. MADDEN. The company that is not transmitting power into the United States?

Gen. GREENE. Yes, sir.

Mr. CASSIDY. But their permit runs from the Secretary of War of the United States?

Gen. GREENE. Yes, sir.

Mr. MADDEN. Have any of the stockholders of this company any connection with any company you are interested in?

Gen. GREENE. No, sir.

Mr. MADDEN. Are you a stockholder?

Gen. GREENE. No, sir.

Mr. MADDEN. Are any of your associates stockholders in it?

Gen. GREENE. No, sir.

Mr. MADDEN. Are any of your associates in the American company connected with this Canadian company that is not transmitting into the United States?

Gen. GREENE. No, sir; there are no financial relations of any kind.

MR. MADDEN. Existing between you and your associates and any of the people interested in this company?

Gen. GREENE. No, sir.

MR. CASSIDY. You would not say it was a dog in the manger bill there, would you?

Gen. GREENE. No; I think they have hesitated to make the investment.

MR. CASSIDY. But hung onto the right to do it?

Gen. GREENE. Yes.

MR. EDWARDS. Is that company represented here to-day by anyone?

Gen. GREENE. It was represented at the previous hearing by Mr. John G. Johnson, of Philadelphia. I do not see him here.

MR. YOUNG. Gen. Greene, am I correct in understanding that if this bill passes and the diversion of this 4,400 additional cubic feet of water were permitted, all of the power it would develop would be developed in the United States?

Gen. GREENE. Yes, sir.

MR. YOUNG. So it makes an increase of exactly that amount of power to be developed in this country?

Gen. GREENE. Yes, sir. The amount of power which will be developed depends upon who gets it and the amount of head.

MR. YOUNG. Certainly.

In addition to his oral statement Gen. Greene submits the following:

With the permission of the committee I should like to say that I think Mr. Scovell labors under an erroneous impression in regard to the negotiation of the treaty. I understood him to say that he was called frequently into conference by Secretary Root and Ambassador Bryce while the treaty was under negotiation, and that he endeavored to have an article incorporated in the treaty to provide for the export of power from Canada; that the Canadians were not willing to agree to this, and that as a compromise the diversion of an additional 4,400 cubic feet of water on the American side was authorized.

I think that if Senator Root, who as Secretary of State negotiated the treaty, were called to the stand his testimony would be not what Mr. Scovell has stated, but that he did endeavor to have an article incorporated in the treaty providing that there should be no restriction by either the United States or by Canada on the transmission of power across the boundary by way of export duty, import duty, or otherwise; that the Canadians were unwilling to agree to this, but they gave Mr. Root unqualified assurances that the provisions of the contracts between the Canadian power companies and the Ontario Government by which these power companies are authorized to send half of their power to the United States, would be fully and absolutely respected, notwithstanding the provisions of the export law of the Dominion of Canada; and that on the faith of such assurances Mr. Root waived the article in regard to the transmission of power across the boundary.

I think Mr. Root will testify that the diversion of 4,400 cubic feet additional on the American side had no connection with the question of export of power from Canada.

I make this statement on my own responsibility, without consulting Senator Root, because it seems undesirable that the statement of Mr. Scovell should go into the record unchallenged. If the committee considers the matter of sufficient importance, of course they can ask Senator Root himself in regard to the negotiations connected with the treaty.

MEMORANDUM CONCERNING THE RESTRICTIONS ON THE USE OF NIAGARA POWER.

[Submitted by Gen. Francis V. Greene, together with certain exhibits.]

DECEMBER 1, 1910.

First. The campaign for the purpose of preserving the scenic grandeur of Niagara Falls was begun by the American Civic Association in the summer of

1905. The association asserted that Niagara Falls had been seriously injured by the power companies, and unless legislation was enacted by Congress the Falls would speedily be entirely ruined. The annual meeting of the association was held at Cleveland in the autumn of 1905, and the association secured the support of Mr. Burton, then Member of Congress from that district. The President of the United States in his annual message to Congress briefly recommended that legislation be enacted to preserve the Falls from destruction. The association procured the signatures, it is said, of 100,000 people asking for such legislation. Soon after the meeting of Congress Mr. Burton introduced his bill, entitled "An act for the control and regulation of the waters of Niagara River, for the preservation of Niagara Falls, and for other purposes." Numerous hearings were held before the Rivers and Harbors Committee, of which Mr. Burton was then chairman, at which the constitutionality of the proposed legislation, the necessity for it, and the form of it were elaborately argued.

The bill was passed and approved by the President on June 29, 1906.¹ It was to remain in force for three years, but on March 3, 1909, it was, by joint resolution, extended for two years.

Unless further extended, it will expire by limitation on June 29, 1911.

Second. Section 4 of the act requested the President of the United States to negotiate a treaty with the Government of Great Britain, providing "for such regulation and control of the waters of Niagara River and its tributaries as will preserve the scenic grandeur of Niagara Falls and of the rapids in said river." Such a treaty was negotiated, ratified by the Senate on March 3, 1909, ratified by Great Britain in March, 1910, and proclaimed by the President to be in force from and after May 13, 1910.²

Third. The treaty is the supreme law of the land. The Burton law is in some respects inconsistent with the treaty.

The Burton law restricts the diversion of water on the American side to 15,600 cubic feet per second; the treaty raises the limit of restriction to 20,000 cubic feet per second.

The Burton law places restrictions upon the amount of power which can be transmitted into the United States from Canada; the treaty makes no restriction on the transmission of power from Canada into the United States.

Under these circumstances Mr. Alexander, Member of Congress from Buffalo, introduced a bill in June, 1910,³ amending the Burton law so as to make it comply with the terms of the treaty, and extending the operations of the Burton law thus amended so long as the treaty remains in force. The Alexander bill increases the amount of water which can be diverted on the American side from 15,600 cubic feet per second to 20,000 cubic feet per second; and it leaves out of the bill all restrictions upon the transmission of power from Canada into the United States. In other respects the original Burton law is not changed. The original law was intended, in pursuance of its purpose to preserve Niagara Falls, to prevent any new power projects from being started at Niagara; and it therefore stipulated that the permits, which under the law the Secretary of War was authorized to issue for the diversion of water on the American side, should be issued only to those individuals, companies or corporations which were at that time actually producing power "from the waters of said river, or its tributaries, in the State of New York, or from the Erie Canal." The original law also prescribed penalties of fine and imprisonment for violations of the law, and gave jurisdiction over such cases to the United States circuit court. These provisions in identical language are repeated in the Alexander bill, which is simply the Burton law amended to accord with the treaty.

Fourth. Prior to the introduction of the Burton law two American and three Canadian corporations, acting on the faith of laws enacted and contracts made by and with the State of New York, the Province of Ontario, and the Dominion of Canada, had undertaken the construction of five extensive projects for the development of power, three of them on the Canadian and two of them on the American side. At that time upward of \$30,000,000 had been expended on these projects, which were all of them incomplete; but relying upon the rights granted to them by the public authorities on both sides of the river, the companies had made their plans and entered into contracts, which would have entailed enormous financial loss, if not entire ruin, unless the companies had been permitted to carry out these projects. It was quite

¹ See Exhibit A, page 559. ² See Exhibit B, page 561. ³ See Exhibit C, page 567.

clearly shown in the hearings before the Burton committee that the diversion of the water necessary to carry out to their full extent the projects which then were only partially completed, would not result in any serious injury to the scenic grandeur of Niagara Falls. Nevertheless, the Burton law only provided for the partial completion of these projects. Its restrictions upon the diversion of water on the American side and the transmission of power from the Canadian side were such that the companies would only have been able partially to complete their projects. This injustice and inequity were remedied by the treaty, which was the result of negotiations extending over nearly two years in which the whole subject was thoroughly examined with the aid of government experts on both sides. The treaty carries out the original purpose of the Burton Act to preserve the scenic grandeur of Niagara Falls by preventing any new power enterprises, but it permits the companies which had expended such enormous sums of money to carry out the plans which they had formed on the faith of the law as it stood when such plans were made. These plans contemplated the use of a small portion of the waters of Niagara for the delivery of cheap electrical power to the people of central and western New York, nearly 2,500,000 in number, occupying a broad belt more than 200 miles in length between Utica and Dunkirk. Buffalo and the entire Niagara frontier from Niagara Falls to the steel industries at Lackawanna, as well as the cities of Rochester, Syracuse, Auburn, Lockport, Jamestown, Dunkirk, Batavia, and many smaller communities are vitally interested in seeing that this treaty is carried into effect, and that it should no longer be practically nullified by the Burton law in its present form.

Unless the treaty is given full effect the industries of central and western New York will be seriously crippled and their development arrested, because the companies which now have transmission lines, of a total length of 500 miles, supplying Niagara power to these industries, have about reached the limit of the power which they can obtain unless the Alexander bill is enacted into law.

Fifth. The average flow of the Niagara River, as determined by the observations of the United States engineers extending over a period of 51 years, is 212,000 cubic feet per second. The treaty authorizes 20,000 cubic feet to be taken out above the Falls on the American side and 36,000 cubic feet on the Canadian side, a total of 56,000 cubic feet, or about one-fourth of the entire amount.

The amount of power which can be produced by 1 cubic foot per second varies among the different power companies from 9 horsepower to 17 horsepower, depending upon where the water is taken and the nature of the installation. The average is a little less than 13 horsepower per cubic foot. The total amount of power which could be developed at Niagara on the basis of using all of the average flow of the river is therefore about 2,750,000 horsepower, and the amount of power that can be developed under the restrictions imposed by the treaty will be less than 700,000 horsepower. The present installation at the falls is approximately 400,000 horsepower, which will shortly be increased to about 450,000 horsepower.

Sixth. Elaborate measurements taken by the United States engineers in 1908, at a time when the American power houses were all temporarily shut down, show that the difference in depth in the water passing over the American Fall when the power houses are in operation and when not a wheel is turning is only a fraction of an inch. This is determined by minute and complicated scientific measurements. It is not visible to the eye, and it has no effect upon the scenic grandeur of Niagara Falls.

In Exhibit D are reproductions of photographs¹ of the Falls taken in 1876, 1885, and 1888, when there were no electric power plants; in 1900 and 1905, when the amount of power in use was about 100,000 horsepower, and in 1910, when the amount was more than 330,000 horsepower. These photographs show that under similar conditions, in spite of an increasing diversion of water for power purposes, the appearance of the Falls presents no change which can be detected by the eye. It can be confidently asserted that under the restrictions imposed by the treaty it will require scientific measurements to detect the change in the depth of the water at the Falls, but that this change will not be visible to the eye. The scenic grandeur of Niagara Falls will be preserved unimpaired.

Seventh. The production of 1 horsepower continuously for 24 hours throughout every day in the year requires the consumption, under the most improved and modern apparatus, of about 13 tons of coal per annum. The treaty has

¹ See page 569.

decided that about 700,000 horsepower can be taken from Niagara without affecting its scenic grandeur. To produce this amount of power by coal would require about 8,500,000 tons of coal per annum. This is a comparatively small portion of the 450,000,000 tons of coal consumed in the United States every year. But it is still worth saving. There is absolutely no destruction of natural resources in the use of falling water for producing power. The eternal laws of gravity, evaporation, and precipitation form a cycle in which the sun's heat is the ultimate source of energy; and in this cycle the loss of such energy is inappreciable and can not be measured by any instruments or methods known to man.

The scenic grandeur of Niagara appeals to the imagination as a manifestation of overwhelming force. The utilization of a small portion of this titanic force by the wit and brain of man for the benefit of his fellow men equally appeals to the imagination; and the thousands of visitors who annually go through the different power houses are quite as much impressed by the evidences which they there see of mechanical ingenuity and of the control by man over gigantic force as they are by the spectacle of this gigantic force going to waste.

Eighth. The treaty runs for five years from May, 1910, and thereafter until terminated by either country on one year's notice. It has determined and fixed, after the most careful consideration, the restrictions which so long as the treaty remains in force are placed upon the use of Niagara water for power purposes.

Under the contracts made with the Canadian authorities by the Canadian power companies one-half of the power generated in Canada can be transmitted to the United States. The Burton law undertakes to nullify these contracts by limiting the amount of power which could be brought in from Canada. The treaty, recognizing that no harm could be done to Canada and much good could be done to the United States by bringing in this surplus power from Canada, placed no restrictions upon the transmission of power from Canada, so that the manufacturers of western New York might have the benefit of all the power which under their agreements with the Canadian authorities the Canadian power companies can send here.

It only remains to enact such legislation as will give full force and effect to the treaty; and this is done by the Alexander bill.

FRANCIS V. GREENE.

EXHIBIT A.

THE BURTON LAW.

[Public, No. 367.]

An Act For the control and regulation of the waters of Niagara River, for the preservation of Niagara Falls, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That the diversion of water from Niagara River or its tributaries, in the State of New York, is hereby prohibited, except with the consent of the Secretary of War as hereinafter authorized in section two of this act: *Provided*, That this prohibition shall not be interpreted as forbidding the diversion of the waters of the Great Lakes or of Niagara River for sanitary or domestic purposes, or for navigation, the amount of which may be fixed from time to time by the Congress of the United States, or by the Secretary of War of the United States under its direction.

SEC. 2. That the Secretary of War is hereby authorized to grant permits for the diversion of water in the United States from said Niagara River or its tributaries for the creation of power to individuals, companies, or corporations which are now actually producing power from the waters of said river, or its tributaries, in the State of New York, or from the Erie Canal; also permits for the transmission of power from the Dominion of Canada into the United States, to companies legally authorized therefor, both for diversion and transmission, as hereinafter stated, but permits for diversion shall be issued only to the individuals, companies, or corporations as aforesaid, and only to the amount now actually in use or contracted to be used in factories the buildings for which are now in process of construction, not exceeding to any one individual, company, or corporation as aforesaid a maximum amount of eight thousand six hundred cubic feet per second, and not exceeding to all individuals, companies,

or corporations as aforesaid an aggregate amount of fifteen thousand six hundred cubic feet per second; but no revocable permits shall be issued by the said Secretary under the provisions hereafter set forth for the diversion of additional amounts of water from the said river or its tributaries until the approximate amount for which permits may be issued as above, to wit, fifteen thousand six hundred cubic feet per second, shall for a period of not less than six months have been diverted from the waters of said river or its tributaries, in the State of New York: *Provided*, That the said Secretary, subject to the provisions of section five of this act, under the limitations relating to time above set forth is hereby authorized to grant revocable permits, from time to time, to such individuals, companies, or corporations, or their assigns, for the diversion of additional amounts of water from the said river or its tributaries to such amount, if any, as, in connection with the amount diverted on the Canadian side, shall not injure or interfere with the navigable capacity of said river, or its integrity and proper volume as a boundary stream, or the scenic grandeur of Niagara Falls; and that the quantity of electrical power which may by permits be allowed to be transmitted from the Dominion of Canada into the United States shall be one hundred and sixty thousand horsepower: *Provided further*, That the said Secretary, subject to the provisions of section five of this act, may issue revocable permits for the transmission of additional electrical power so generated in Canada, but in no event shall the amount included in such permits, together with the said one hundred and sixty thousand horsepower and the amount generated and used in Canada, exceed three hundred and fifty thousand horsepower: *Provided always*, That the provisions herein permitting diversions and fixing the aggregate horsepower herein permitted to be transmitted into the United States, as aforesaid, are intended as a limitation on the authority of the Secretary of War, and shall in no wise be construed as a direction to said Secretary to issue permits, and the Secretary of War shall make regulations preventing or limiting the diversion of water and the admission of electrical power as herein stated; and the permits for the transmission of electrical power issued by the Secretary of War may specify the persons, companies, or corporations by whom the same shall be transmitted, and the persons, companies, or corporations to whom the same shall be delivered.

SEC. 3. That any person, company, or corporation diverting water from the said Niagara River or its tributaries, or transmitting electrical power into the United States from Canada, except as herein stated, or violating any of the provisions of this act, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding two thousand five hundred dollars nor less than five hundred dollars, or by imprisonment (in the case of a natural person) not exceeding one year, or by both such punishments, in the discretion of the court. And, further, the removal of any structures or parts of structures erected in violation of this act, or any construction incidental to or used for such diversion of water or transmission of power as is herein prohibited, as well as any diversion of water or transmission of power in violation hereof, may be enforced or enjoined at the suit of the United States by any circuit court having jurisdiction in any district in which the same may be located, and proper proceedings to this end may be instituted under the direction of the Attorney General of the United States.

SEC. 4. That the President of the United States is respectfully requested to open negotiations with the Government of Great Britain for the purpose of effectually providing by suitable treaty with said Government, for such regulation and control of the waters of Niagara River and its tributaries as will preserve the scenic grandeur of Niagara Falls and of the rapids in said river.

SEC. 5. That the provisions of this act shall remain in force for three years from and after date of its passage, at the expiration of which time all permits granted hereunder by the Secretary of War shall terminate unless sooner revoked, and the Secretary of War is hereby authorized to revoke any or all permits granted by him by authority of this act, and nothing herein contained shall be held to confirm, establish, or confer any rights heretofore claimed or exercised in the diversion of water or the transmission of power.

SEC. 6. That for accomplishing the purposes detailed in this act the sum of fifty thousand dollars, or so much thereof as may be necessary, is hereby appropriated from any moneys in the Treasury not otherwise appropriated.

SEC. 7. That the right to alter, amend, or repeal this act is hereby expressly reserved.

Approved, June 29, 1906.

House joint resolution 262, extending the operation of an act for the control and regulation of the waters of Niagara River, for the preservation of Niagara Falls, and for other purposes.

Whereas the provisions of the act entitled "An act for the control and regulation of the waters of Niagara River, for the preservation of Niagara Falls, and for other purposes," approved June twenty-ninth, nineteen hundred and six, will expire by limitation on June twenty-ninth, nineteen hundred and nine; and

Whereas a date for the termination of the operation of said act was provided therein, but with a view to the more permanent settlement of the questions involved by a treaty with Great Britain, and by further legislation appropriate to the situation, and such treaty not having been negotiated, it is desirable that the provisions of said act should be continued until such permanent settlement can be made: Therefore, be it

Resolved, etc., That the provisions of the aforesaid act be, and they are hereby, extended for two years from June twenty-ninth, nineteen hundred and nine, being the date of the expiration of the operation of said act, save in so far as any portion thereof may be found inapplicable or already complied with.

Approved, March 3, 1909.

EXHIBIT B.

TREATY SERIES, NO. 54S—TREATY BETWEEN THE UNITED STATES AND GREAT BRITAIN—
BOUNDARY WATERS BETWEEN THE UNITED STATES AND CANADA.

Signed at Washington January 11, 1909.

Ratification advised by the Senate March 3, 1909.

Ratified by the President April 1, 1910.

Ratified by Great Britain March 31, 1910.

Ratifications exchanged at Washington May 5, 1910.

Proclaimed May 13, 1910.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

Whereas a treaty between the United States of America and His Majesty the King of the United Kingdom of Great Britain and Ireland and of the British dominions beyond the seas, Emperor of India, to prevent disputes regarding the use of boundary waters and to settle all questions which are now pending between the United States and the Dominion of Canada involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other along their common frontier, and to make provision for the adjustment and settlement of all such questions as may hereafter arise, was concluded and signed by their respective plenipotentiaries at Washington on the eleventh day of January, one thousand nine hundred and nine, the original of which treaty is, word for word, as follows:

The United States of America and His Majesty the King of the United Kingdom of Great Britain and Ireland and of the British dominions beyond the seas, Emperor of India, being equally desirous to prevent disputes regarding the use of boundary waters and to settle all questions which are now pending between the United States and the Dominion of Canada involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other along their common frontier, and to make provision for the adjustment and settlement of all such questions as may hereafter arise, have resolved to conclude a treaty in furtherance of these ends, and for that purpose have appointed as their respective plenipotentiaries:

The President of the United States of America, Elihu Root, Secretary of State of the United States; and

His Britannic Majesty, the Right Honorable James Bryce, O. M., his ambassador extraordinary and plenipotentiary at Washington.

Who, after having communicated to one another their full powers, found in good and due form, have agreed upon the following articles:

PRELIMINARY ARTICLE.

For the purposes of this treaty boundary waters are defined as the waters from main shore to main shore of the lakes and rivers and connecting waterways or the portions thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.

ARTICLE I.

The high contracting parties agree that the navigation of all navigable boundary waters shall forever continue free and open for the purposes of commerce to the inhabitants and to the ships, vessels, and boats of both countries equally, subject, however, to any laws and regulations of either country, within its own territory, not inconsistent with such privilege of free navigation and applying equally and without discrimination to the inhabitants, ships, vessels, and boats of both countries.

It is further agreed that so long as this treaty shall remain in force this same right of navigation shall extend to the waters of Lake Michigan and to all canals connecting boundary waters and now existing or which may hereafter be constructed on either side of the line. Either of the high contracting parties may adopt rules and regulations governing the use of such canals within its own territory and may charge tolls for the use thereof, but all such rules and regulations and all tolls charged shall apply alike to the subjects or citizens of the high contracting parties and the ships, vessels, and boats of both of the high contracting parties, and they shall be placed on terms of equality in the use thereof.

ARTICLE II.

Each of the high contracting parties reserves to itself or to the several State Governments on the one side and the Dominion or Provincial Governments on the other, as the case may be, subject to any treaty provisions now existing with respect thereto, the exclusive jurisdiction and control over the use and diversion, whether temporary or permanent, of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters; but it is agreed that any interference with or diversion from their natural channel of such waters on either side of the boundary, resulting in any injury on the other side of the boundary, shall give rise to the same rights and entitle the injured parties to the same legal remedies as if such injury took place in the country where such diversion or interference occurs; but this provision shall not apply to cases already existing or to cases expressly covered by special agreement between the parties hereto.

It is understood, however, that neither of the high contracting parties intends by the foregoing provision to surrender any right which it may have to object to any interference with or diversions of waters on the other side of the boundary the effect of which would be productive of material injury to the navigation interests on its own side of the boundary.

ARTICLE III.

It is agreed that, in addition to the uses, obstructions, and diversions heretofore permitted or hereafter provided for by special agreement between the parties hereto, no further or other uses or obstructions or diversions, whether temporary or permanent, of boundary waters on either side of the line, affecting the natural level or flow of boundary waters on the other side of the line, shall be made except by authority of the United States or the Dominion of Canada within their respective jurisdictions and with the approval, as hereinafter provided, of a joint commission, to be known as the International Joint Commission.

The foregoing provisions are not intended to limit or interfere with the existing rights of the Government of the United States on the one side and the Government of the Dominion of Canada on the other, to undertake and carry on governmental works in boundary waters for the deepening of chan-

nels, the construction of breakwaters, the improvement of harbors, and other governmental works for the benefit of commerce and navigation, provided that such works are wholly on its own side of the line and do not materially affect the level or flow of the boundary waters on the other, nor are such provisions intended to interfere with the ordinary use of such waters for domestic and sanitary purposes.

ARTICLE IV.

The high contracting parties agree that, except in cases provided for by special agreement between them, they will not permit the construction or maintenance on their respective sides of the boundary of any remedial or protective works or any dams or other obstructions in waters flowing from boundary waters or in waters at a lower level than the boundary in rivers flowing across the boundary, the effect of which is to raise the natural level of waters on the other side of the boundary unless the construction or maintenance thereof is approved by the aforesaid International Joint Commission.

It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other.

ARTICLE V.

The high contracting parties agree that it is expedient to limit the diversion of waters from the Niagara River so that the level of Lake Erie and the flow of the stream shall not be appreciably affected. It is the desire of both parties to accomplish this object with the least possible injury to investments which have already been made in the construction of power plants on the United States side of the river under grants of authority from the State of New York, and on the Canadian side of the river under licenses authorized by the Dominion of Canada and the Province of Ontario.

So long as this treaty shall remain in force no diversion of the waters of the Niagara River above the Falls from the natural course and stream thereof shall be permitted except for the purposes and to the extent hereinafter provided.

The United States may authorize and permit the diversion within the State of New York of the waters of said river above the Falls of Niagara, for power purposes, not exceeding in the aggregate a daily diversion at the rate of twenty thousand cubic feet of water per second.

The United Kingdom, by the Dominion of Canada, or the Province of Ontario, may authorize and permit the diversion within the Province of Ontario of the waters of said river above the Falls of Niagara, for power purposes, not exceeding in the aggregate a daily diversion at the rate of thirty-six thousand cubic feet of water per second.

The prohibitions of this article shall not apply to the diversion of water for sanitary or domestic purposes, or for the service of canals for the purposes of navigation.

ARTICLE VI.

The high contracting parties agree that the St. Mary and Milk Rivers and their tributaries (in the State of Montana and the Provinces of Alberta and Saskatchewan) are to be treated as one stream for the purposes of irrigation and power, and the waters thereof shall be apportioned equally between the two countries, but in making such equal apportionment, more than half may be taken from one river and less than half from the other by either country so as to afford a more beneficial use to each. It is further agreed that in the division of such waters during the irrigation season, between the 1st of April and 31st of October, inclusive, annually, the United States is entitled to a prior appropriation of 500 cubic feet per second of the waters of the Milk River, or so much of such amount as constitutes three-fourths of its natural flow, and that Canada is entitled to a prior appropriation of 500 cubic feet per second of the flow of St. Mary River, or so much of such amount as constitutes three-fourths of its natural flow.

The channel of the Milk River in Canada may be used at the convenience of the United States for the conveyance, while passing through Canadian territory, of waters diverted from the St. Mary River. The provisions of Article II

of this treaty shall apply to any injury resulting to property in Canada from the conveyance of such waters through the Milk River.

The measurement and apportionment of the water to be used by each country shall from time to time be made jointly by the properly constituted reclamation officers of the United States and the properly constituted irrigation officers of His Majesty under the direction of the International Joint Commission.

ARTICLE VII.

The high contracting parties agree to establish and maintain an International Joint Commission of the United States and Canada composed of six commissioners, three on the part of the United States appointed by the President thereof, and three on the part of the United Kingdom appointed by His Majesty on the recommendation of the Governor in Council of the Dominion of Canada.

ARTICLE VIII.

This International Joint Commission shall have jurisdiction over and shall pass upon all cases involving the use or obstruction or diversion of the waters with respect to which, under Articles III and IV of this treaty, the approval of this commission is required, and in passing upon such cases the commission shall be governed by the following rules or principles which are adopted by the high contracting parties for this purpose:

The high contracting parties shall have, each on its own side of the boundary, equal and similar rights in the use of the waters hereinbefore defined as boundary waters.

The following order of precedence shall be observed among the various uses enumerated hereinafter for these waters, and no use shall be permitted which tends materially to conflict with or restrain any other use which is given preference over it in this order of precedence:

(1) Uses for domestic and sanitary purposes;

(2) Uses for navigation, including the service of canals for the purposes of navigation;

(3) Uses for power and for irrigation purposes.

The foregoing provisions shall not apply to or disturb any existing uses of boundary waters on either side of the boundary.

The requirement for an equal division may, in the discretion of the commission, be suspended in cases of temporary diversions along boundary waters at points where such equal division can not be made advantageously on account of local conditions and where such diversion does not diminish elsewhere the amount available for use on the other side.

The commission in its discretion may make its approval in any case conditional upon the construction of remedial or protective works to compensate so far as possible for the particular use or diversion proposed, and in such cases may require that suitable and adequate provision, approved by the commission, be made for the protection and indemnity against injury of any interests on either side of the boundary.

In cases involving the elevation of the natural level of waters on either side of the line as a result of the construction or maintenance on the other side of remedial or protective works or dams or other obstructions in boundary waters or in waters flowing therefrom or in waters below the boundary in rivers flowing across the boundary, the commission shall require, as a condition of its approval thereof, that suitable and adequate provision, approved by it, be made for the protection and indemnity of all interests on the other side of the line which may be injured thereby.

The majority of the commissioners shall have power to render a decision. In case the commission is evenly divided upon any question or matter presented to it for decision, separate reports shall be made by the commissioners on each side to their own Government. The high contracting parties shall thereupon endeavor to agree upon an adjustment of the question or matter of difference, and if an agreement is reached between them it shall be reduced to writing in the form of a protocol, and shall be communicated to the commissioners, who shall take such further proceedings as may be necessary to carry out such agreement.

ARTICLE IX.

The high contracting parties further agree that any other questions or matters of difference arising between them involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along the common frontier between the United States and the Dominion of Canada, shall be referred from time to time to the international joint commission for examination and report, whenever either the Government of the United States or the Government of the Dominion of Canada shall request that such questions or matters of difference be so referred.

The international joint commission is authorized in each case so referred to examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.

Such reports of the commission shall not be regarded as decisions of the questions or matters so submitted either on the facts or the law, and shall in no way have the character of an arbitral award.

The commission shall make a joint report to both Governments in all cases in which all or a majority of the commissioners agree, and in case of disagreement the minority may make a joint report to both Governments or separate reports to their respective Governments.

In case the commission is evenly divided upon any question or matter referred to it for report, separate reports shall be made by the commissioners on each side to their own Government.

ARTICLE X.

Any questions or matters of difference arising between the high contracting parties involving the rights, obligations, or interests of the United States or of the Dominion of Canada either in relation to each other or to their respective inhabitants, may be referred for decision to the international joint commission by the consent of the two parties, it being understood that on the part of the United States any such action will be by and with the advice and consent of the Senate, and on the part of His Majesty's Government with the consent of the Governor General in Council. In each case so referred the said commission is authorized to examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.

A majority of the said commission shall have power to render a decision or finding upon any of the questions or matters so referred.

If the said commission is equally divided or otherwise unable to render a decision or finding as to any questions or matters so referred, it shall be the duty of the commissioners to make a joint report to both Governments, or separate reports to their respective Governments, showing the different conclusions arrived at with regard to the matters or questions so referred, which questions or matters shall thereupon be referred for decision by the high contracting parties to an umpire chosen in accordance with the procedure prescribed in the fourth, fifth, and sixth paragraphs of Article XLV of The Hague Convention for the pacific settlement of international disputes, dated October 18, 1907. Such umpire shall have power to render a final decision with respect to those matters and questions so referred on which the commission failed

ARTICLE XI.

A duplicate original of all decisions rendered and joint reports made by the commission shall be transmitted to and filed with the Secretary of State of the United States and the Governor General of the Dominion of Canada, and to them shall be addressed all communications of the commissions.

ARTICLE XII.

The international joint commission shall meet and organize at Washington promptly after the members thereof are appointed, and when organized the commission may fix such times and places for its meetings as may be necessary,

subject at all times to special call or direction by the two Governments. Each commissioner, upon the first joint meeting of the commission after his appointment, shall, before proceeding with the work of the commission, make and subscribe a solemn declaration in writing that he will faithfully and impartially perform the duties imposed upon him under this treaty, and such declaration shall be entered on the records of the proceedings of the commission.

The United States and Canadian sections of the commission may each appoint a secretary, and these shall act as joint secretaries of the commission at its joint sessions, and the commission may employ engineers and clerical assistants from time to time as it may deem advisable. The salaries and personal expenses of the commission and of the secretaries shall be paid by their respective Governments, and all reasonable and necessary joint expenses of the commission incurred by it shall be paid in equal moieties by the high contracting parties.

The commission shall have power to administer oaths to witnesses, and to take evidence on oath whenever deemed necessary in any proceeding, or inquiry, or matter within its jurisdiction under this treaty, and all parties interested therein shall be given convenient opportunity to be heard, and the high contracting parties agree to adopt such legislation as may be appropriate and necessary to give the commission the powers above mentioned on each side of the boundary, and to provide for the issue of subpoenas and for compelling the attendance of witnesses in proceedings before the commission. The commission may adopt such rules of procedure as shall be in accordance with justice and equity and may make such examination in person and through agents or employees as may be deemed advisable.

ARTICLE XIII.

In all cases where special agreements between the high contracting parties hereto are referred to in the foregoing articles, such agreements are understood and intended to include not only direct agreements between the high contracting parties, but also any mutual arrangement between the United States and the Dominion of Canada expressed by concurrent or reciprocal legislation on the part of Congress and the Parliament of the Dominion.

ARTICLE XIV.

The present treaty shall be ratified by the President of the United States of America, by and with the advice and consent of the Senate thereof, and by His Britannic Majesty. The ratifications shall be exchanged at Washington as soon as possible and the treaty shall take effect on the date of the exchange of its ratifications. It shall remain in force for five years, dating from the day of exchange of ratifications, and thereafter until terminated by twelve months' written notice given by either high contracting party to the other.

In faith whereof the respective plenipotentiaries have signed this treaty in duplicate and have hereunto affixed their seals.

Done at Washington the 11th day of January, in the year of our Lord one thousand nine hundred and nine,

(Signed) ELIHU ROOT. [SEAL]

(Signed) JAMES BRYCE. [SEAL]

And whereas the Senate of the United States by their resolution of March 3, 1909 (two-thirds of the Senators present concurring therein), did advise and consent to the ratification of the said treaty with the following understanding to wit:

Resolved further (as a part of this ratification), That the United States approves this treaty with the understanding that nothing in this treaty shall be construed as affecting or changing any existing territorial or riparian rights in the water, or rights of the owners of lands under water, on either side of the international boundary at the rapids of the St. Marys River at Sault Ste. Marie, in the use of the waters flowing over such lands, subject to the requirements of navigation in boundary waters, and of navigation canals, and without prejudice to the existing right of the United States and Canada, each to use the waters of the St. Marys River within its own territory; and further, that nothing in this treaty shall be construed to interfere with the drainage of wet, swamp, and overflowed lands into streams flowing into boundary waters, and that this interpretation will be mentioned in the ratification of this treaty as conveying the true meaning of the treaty, and will, in effect, form part of the treaty.

And whereas the said understanding has been accepted by the Government of Great Britain, and the ratifications of the two Governments of the said treaty were exchanged in the city of Washington, on the 5th day of May, one thousand nine hundred and ten:

Now, therefore, be it known that I, William Howard Taft, President of the United States of America, have caused the said treaty and the said understanding, as forming a part thereof, to be made public, to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this thirteenth day of May, in the year of our Lord one thousand nine hundred and ten, and of the independence of the United States of America the one hundred and thirty-fourth.

[SEAL]

By the President:

P C KNOX

Secretary of State.

WM H. TAFT

PROTOCOL OF EXCHANGE.

On proceeding to the exchange of the ratifications of the treaty signed at Washington on January 11, 1909, between the United States and Great Britain, relating to boundary waters and questions arising along the boundary between the United States and the Dominion of Canada, the undersigned plenipotentiaries, duly authorized thereto by their respective Governments, hereby declare that nothing in this treaty shall be construed as affecting, or changing, any existing territorial or riparian rights in the water, or rights of the owners of lands under water, on either side of the international boundary at the rapids of the St. Marys River at Sault Ste. Marie, in the use of the waters flowing over such lands, subject to the requirements of navigation in boundary waters and of navigation canals, and without prejudice to the existing right of the United States and Canada, each to use the waters of the St. Marys River, within its own territory; and further, that nothing in this treaty shall be construed to interfere with the drainage of wet, swamp, and overflowed lands into streams flowing into boundary waters, and also that this declaration shall be deemed to have equal force and effect as the treaty itself and to form an integral part thereto.

The exchange of ratifications then took place in the usual form.

In witness whereof they have signed the present protocol of exchange and have affixed their seals thereto.

Done at Washington this 5th day of May, one thousand nine hundred and ten.

PHILANDER C KNOX [SEAL]

JAMES BRYCE [SEAL]

EXHIBIT C.

THE ALEXANDER BILL.

[H. R. 26688, Sixty-first Congress, second session.]

A BILL To amend sections two, three, and five of an Act entitled "An Act for the control and regulation of the waters of Niagara River, for the preservation of Niagara Falls, and for others purposes," approved June twenty-ninth, nineteen hundred and six.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That sections two, three, and five of the Act entitled "An Act for the control and regulation of the waters of Niagara River, for the preservation of Niagara Falls, and for other purposes," approved June twenty-ninth, nineteen hundred and six, are hereby amended to read as follows:

"SEC. 2. That the Secretary of War is hereby authorized to grant permits for the diversion, within the State of New York, of the waters of Niagara River, above the Falls of Niagara, for the creation of power to individuals, companies, or corporations which are now actually producing power from the waters of the said river or its tributaries, in the State of New York, or from the Erie Canal;

but permits for diversion shall be issued only to the individuals, companies, or corporations as aforesaid, and not exceeding to all individuals, companies, or corporations as aforesaid in the aggregate a daily diversion at the rate of twenty thousand cubic feet of water per second: *Provided*, That the provisions herein permitting diversions are intended as a limitation on the authority of the Secretary of War, and shall in no wise be construed as a direction to said Secretary to issue permits, and the Secretary of War shall make regulations preventing or limiting the diversion of water as herein stated.

"SEC. 3. That any person, company, or corporation diverting the waters from the said Niagara River, above the Falls of Niagara, except as herein stated, or violating any of the provisions of this Act, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding two thousand five hundred dollars nor less than five hundred dollars, or by imprisonment (in the case of a natural person) not exceeding one year, or by both such punishments, in the discretion of the court. And, further, that the removal of any structures or parts of structures erected in violation of this Act, or any construction incidental to or used for such diversion of water as is herein prohibited, as well as any diversion of water in violation hereof, may be enforced or enjoined at the suit of the United States by any circuit court having jurisdiction in any district in which the same may be located, and proper proceedings to this end may be instituted under the direction of the Attorney-General of the United States."

"SEC. 5. That the provisions of this Act shall remain in force, until the termination of the provisions of the treaty between the United States and Great Britain, signed January eleventh, nineteen hundred and nine, providing for the settlement of international differences between the said countries, commonly known as the waterways treaty, and the Secretary of War is hereby authorized to revoke any or all permits for the diversion of water granted by him by authority of this Act, and nothing herein contained shall be held to confirm, establish, or confer any rights heretofore claimed or exercised in the diversion of water: *Provided, however*, That, unless and until revoked according to the terms thereof, all permits for the diversion of water heretofore or hereafter granted by the Secretary of War shall continue to the grantees thereof and their respective successors unless or until superseded by other permits issued herein by the Secretary of War."

SEC. 2. That the right to alter, amend, or repeal this Act is hereby expressly reserved.

EXHIBIT D.

PHOTOGRAPHS OF NIAGARA FALLS TAKEN IN 1876, 1885, 1888,
1900, 1905, AND 1910.



THE AMERICAN FALLS, 1876.



THE AMERICAN FALLS 1888.



THE AMERICAN FALLS, 1900.



THE AMERICAN FALLS, 1910.



THE AMERICAN AND CANADIAN FALLS 1885.



THE AMERICAN AND CANADIAN FALLS, 1905.



THE CANADIAN FALLS, 1900.



THE CANADIAN FALLS, 1910.

[Extracts from the Annual Reports of Chief of Engineers, U. S. Army, for 1909 and 1910.]

ANNUAL REPORT FOR 1909, BY BRIG. GEN. W. L. MARSHALL, CHIEF OF ENGINEERS,
U. S. ARMY (PP. 939-941).

THE CONTROL AND REGULATION OF THE WATERS OF NIAGARA RIVER AND THE PRESER-
VATION OF NIAGARA FALLS.

The approved projects of operations under the various allotments from the appropriation made by the act of Congress of June 29, 1906, had for their purpose the determination of the effects of the diversions authorized by that act, amounting to 15,600 cubic feet per second on the American side, and on the Canadian side of water sufficient for the development and importation into the United States of 160,000 horsepower, upon the navigable capacity of the Niagara River, on its integrity and proper volume as a boundary stream, on the level of Lake Erie, and on the scenic grandeur of Niagara Falls.

The determination of these questions, so far as physically possible, involves surveys and measurements, of levels, of volumes of discharges, of current velocities and directions, and of depths over the crest of the falls. As these are operations of a character similar to those ordinarily performed by the Lake Survey, upon the recommendation of the Chief of Engineers, the Secretary of War authorized the performance of the work involved therein by the Lake Survey, and for this purpose successive allotments have been made, of which two—one of \$5,000 and another of \$3,000—pertained to the fiscal years 1907 and 1908. At the beginning of the present fiscal year operations were in progress upon the work covered by the project for the second allotment (that of \$3,000 above referred to). These operations had for their purpose the making of such additional discharge measurements in the Niagara River as seemed necessary in order to confirm or else to disprove the conclusion, derived from the observations of 1907, that the increased diversions since 1898 had produced no measurable effect upon the level of Lake Erie. This conclusion appeared so anomalous as to require confirmation or explanation. From July 1 to August 7, 1908, 68 discharge measurements were made and the customary accessory gauge and rating observations made. In addition, the creosile portion of the discharge cross section, at the International Bridge, Buffalo, was sounded, and it was found that spans 1, 3, and 4 had not changed since originally measured in 1899, but that in span 2 there had been an increase in mean depth of over 2 feet. This span, however, carries only 2½ per cent of the flow and the change is therefore of minor consequence.

A shutdown of the plant of the Niagara Falls Power Co., covering a large part of the period from 1.30 a. m., July 19, to 7.20 p. m. on August 2, 1908, afforded an unusual opportunity for testing previous deductions concerning, and for ascertaining directly, the effects produced by changes in the quantity of water diverted in the Grass Island-Chippawa pool, and through the courtesy of the company full advantage was taken of this opportunity.

Briefly summarized, the results of the operations of 1908 serve to prove that while the increase in diversion since 1898 in the Chippawa-Grass Island pool, amounting roughly to 7,000 cubic feet per second, has produced no apparent effect upon the level of Lake Erie, this is probably due to the fact that the lowering has been compensated by the construction during the same period of the diversion works of the Ontario Power Co. below Chippawa. In the absence of such compensation, the lowering due to the increased diversion would have amounted to less than half an inch. This conclusion is based upon the discovered relation between the volume of the diversion in Chippawa-Grass Island pool at the falls and the discharge of Lake Erie, which, as derived from study of gauge relations and of the measurements during the shutdown, shows that any change in the volume of this diversion is accompanied by a change of about one-tenth the amount in the flow at the International Bridge.

In addition, the observations prove that the effect of increased diversion in the above-named pool near the falls, by the American power companies, is to reduce the height of the crest of the American Falls by 0.02 foot for each 10,000 cubic feet so diverted, and that the diversion of the full authorized amount—15,100 cubic feet per second—will lower this crest 0.03 foot, or about three-eighths of an inch. Based as it is upon the extensive observations subsequent to July 1, 1908, this determination serves to modify very materially the result stated in the annual report for 1908, on page S94, the latter being derived from a shutdown of a few hours only, during which the change at the crest of the American Falls due to the shutdown was coincident with a rise in Lake Erie due to a southwesterly storm.

While the lowering, due to the diversions of the American power companies, may not in itself be noticeable, it is increased to 0.053 foot = 0.64 inch by the present diversion of the Ontario Power Co. The combined lowering tends to uncover shallow portions of the crest line of the American Falls. It is further accompanied by greater, and consequently more harmful, effects both in the American rapids and at the easterly or Terrapin Point end of the Horseshoe Fall. Terrapin Point is on the New York side of the boundary and, as depths there are naturally slight, the loss of 2.5 inches in depth, which is the total due to all existing diversions, is a matter of moment in its relation to continuity of crest line. But it is on the Canadian side of the boundary that the impairment of the falls is most serious. At the Canadian end of the Horseshoe Falls, which is known to be deficient in depth, the diversion of 15,100 cubic feet per second produces a lowering of about 4.8 inches, which is increased to 8.44 inches by the present diversions of the Ontario Power Co., the Electrical Development Co., the Canadian Niagara Power Co., and the International Railway Co., whose total diversion is now estimated at 10,950 cubic feet per second. The losses at Terrapin Point and at the west end of the Horseshoe are relatively great and, as a whole, the falls have unquestionably been seriously injured by the diversions already made. Additional diversions, now under way, will add to the damage.

A full report upon the work under these allotments was submitted upon November 30, 1908, and reference is invited to this for detailed statements of ascertained gauge relations and of the effects of diversion upon the rapids, upon the Horseshoe Falls, and upon the Niagara River.

As a result of the discharge measurements made in the intake canal of the Niagara Falls Power Co. in 1907 the officer then in charge of the supervision of the operations of the various power and transmission companies, under their permits issued by the Secretary of War, imposed upon this company a limitation to such diversion as might be necessary to generate not to exceed 65,000 electrical horsepower, this limitation being derived from a consideration of the powerhouse load curves covering the time of the discharge measurements. Comparison served to show that this company generated an electrical horsepower for each 0.123 cubic foot of water diverted, and as the International Paper Co. diverted directly from the canal of the power company 700 cubic feet per second there remained for the latter 7,900 cubic feet, corresponding, roundly, to 65,000 electrical horsepower. The validity of the conversion coefficient for forming switchboard readings into volume of water diverted, so far as it applies to conditions actually existing at the time of the discharge measurements, can not fairly be questioned, but as the two powerhouses belonging to this company differ in the details of their construction, with claimed higher mechanical efficiency in the newer house, the officials of the company have asserted that under certain entirely practicable conditions of operation the value of the conversion coefficient will be found to be lower than the figures given.

As any unduly high value of this coefficient serves as an unwarranted restriction upon the output of the company and causes a consequent financial loss, upon April 3, 1909, a project was presented contemplating an exhaustive series of tests with discharge measurements under all reasonable probable conditions of operation. Based upon this project, an allotment of \$5,000 was made upon April 15, 1909, and field operations were begun upon May 4, 1909. To June 30, 1908 discharge measurements were made, covering 29 different distributions of the load. Final results are not yet at hand, but it is certain that by restricting the number of generators in operation to 16, with 6 or less in powerhouse No. 1, the Niagara Falls Power Co. can generate 75,000 electrical horsepower and at the same time not exceed a maximum diversion of 8,600 cubic feet per second.

The permits now in force for the diversion of water from the Niagara River and for the transmission of electrical energy into the United States from Canada are summarized on page S95 of the Report of the Chief of Engineers for 1908.

To August 14, 1908, the supervision of operations under these permits was performed by Maj. C. W. Kutz, Corps of Engineers. Since that date the work of supervision has been performed by the Lake Survey office. In discharging this duty occasional inspections have been made at irregular intervals, and the detailed results of such inspections have been duly reported to the Chief of Engineers. All the companies concerned have, as disclosed by the inspections, loyally observed the limitations of their corresponding permits.

Amount appropriated by act of June 29, 1906.....	\$50,000.00
July 1, 1908, balance unexpended.....	40,069.40
June 30, 1909, amount expended during fiscal year.....	6,592.34
July 1, 1909, balance unexpended.....	33,477.06

(See Appendix F F F 2.)

APPENDIX F F F 2 OF THE ANNUAL REPORT OF THE CHIEF OF ENGINEERS FOR 1909, PAGES 2503-2507, BEING REPORT BY THE LOCAL OFFICER, MAJ. CHARLES KELLER, CORPS OF ENGINEERS.

PRESERVATION OF NIAGARA FALLS AND SUPERVISION OVER POWER AND TRANSMISSION COMPANIES.

At the beginning of the fiscal year, under an allotment of \$3,000 from the appropriation of the act of June 29, 1906, operations were in progress having for their object the measurement of 60 additional discharges of the Niagara River from the International Bridge, the purpose of making these measurements being to get further information on the effect of diversions at Niagara Falls upon the level of Lake Erie and further gauge observations to connect lake and river heights.

Between July 1 and August 7, 1908, 68 discharge measurements were made and small-type automatic gauges were operated at Austin Street (Buffalo), Schlosser's Dock (Echota), Chippawa, Grass Island, Wingdam, Suspension Bridge, Horseshoe Falls, New York, and Whirlpool, Ontario, of which those at Austin Street, Schlosser's Dock, and Wingdam were removed late in August, while the remainder were operated until interrupted by ice.

To complete the published data concerning the discharge of the Niagara River, Table 5, following, gives in the previously adopted form detailed information concerning all discharge measurements made at the International Bridge during the seasons of 1907 and 1908, together with the corresponding meter ratings.

[U. S. Lake Survey.]

DISCHARGE OF NIAGARA RIVER.

TABLE 5.—Summary of discharge measurements, International Bridge Section, 1907-8.

No.	Date.	Meter.	Rating.	Water surface elevation.		Fall lake to bridge.	Change in level at Lake Erie.			Wind.		Discharge.	Weighted mean index velocity per second.
				Lake Erie.	Bridge.		Rise.	Fall.	Direction.	Velocity per hour.			
a	b	c	d	e	f	g	h	i	k	l	m	n	
	1907.			<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>		<i>Miles.</i>	<i>Cu. feet.</i>	<i>Fect.</i>	
1	Oct. 21	2 B	Nov.	572.98	568.03	4.95	0.03	0.14			224,470	6.60	
2	22	2 B	Nov.	573.12	568.18	4.94	0.14	0.00	SW.	25	225,960	6.63	
3	22	4 A	Oct.	573.54	568.51	5.03	0.12	0.07	SW.	30	235,730	6.83	
4	22	1 B	Nov.	573.38	568.45	4.93	0.03	0.28	SW.	10	225,780	6.52	
5	23	1 B	Nov.	572.42	567.71	4.71	0.13	0.26	NW.	25	202,520	6.06	
6	23	1 B	Nov.	572.39	567.64	4.75	0.29	0.01	NW.	30	202,980	6.06	
7	23	2 B	Nov.	572.61	567.75	4.86	0.21	0.02	NW.	30	211,260	6.29	
8	24	1 B	Nov.	572.66	567.73	4.93	0.08	0.04	NW.	6	212,070	6.32	
9	24	2 B	Nov.	572.57	567.72	4.85	0.00	0.16	NW.	6	215,110	6.43	
10	24	2 B	Nov.	572.54	567.70	4.84	0.01	0.11	SW.	8	209,320	6.24	
11	24	1 B	Nov.	572.41	567.57	4.84	0.16	0.07	SW.	10	207,230	6.16	
12	25	1 B	Nov.	572.57	567.99	4.58	0.00	0.38	NW.	15-30	205,690	6.07	

TABLE 5.—Summary of discharge measurements, International Bridge Section, 1907-8—Continued.

No.	Date.	Meter.	Rating.	Water surface elevation.		Fall lake to bridge.	Change in level at Lake Erie.		Wind.		Discharge.	Weighted mean index velocity per second.
				Lake Erie.	Bridge.		Rise.	Fall.	Direction.	Velocity per hour.		
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>
	1908.			<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>		<i>Miles.</i>	<i>Cu. feet.</i>	<i>Fect.</i>
78	July 21	14 B	7	573.08	568.28	4.80	0.21	0.03	NW.	10	215,250	6.30
79	22	14 B	7	573.38	568.43	4.95	0.11	0.07	SW.	5	228,230	6.63
80	22	1 B	8	573.42	568.48	4.94	0.10	0.02	SW.	12	231,430	6.70
81	22	1 B	8	573.29	568.46	4.83	0.05	0.10	SW.	10	224,070	6.51
82	22	1 B	8	573.20	568.39	4.81	0.04	0.09	NW.	5	226,800	6.60
83	23	1 B	8	573.00	568.20	4.80	0.16	0.08	NW.	5	221,660	6.49
84	23	1 B	8	573.08	568.24	4.84	0.06	0.11	NW.	5	222,010	6.48
85	23	1 B	8	573.12	568.29	4.83	0.13	0.14	NE.	8	222,830	6.51
86	23	1 B	8	573.09	568.28	4.81	0.06	0.06	NE.	8	222,630	6.52
87	24	14 B	7	572.84	568.06	4.78	0.06	0.03	NE.	5	213,170	6.27
88	24	14 B	7	572.87	568.07	4.80	0.14	0.12	NE.	5	208,640	6.26
89	24	1 B	8	572.85	568.15	4.70	0.15	0.45	NE.	12	216,190	6.35
90	24	1 B	8	572.72	568.00	4.72	0.18	0.25	NE.	10	213,040	6.27
91	25	14 B	7	573.20	568.34	4.86	0.14	0.12	NE.	4	220,510	6.42
92	25	14 B	7	573.00	568.28	4.72	0.15	0.19	NE.	6	218,340	6.40
93	25	1 B	8	573.08	568.24	4.84	0.13	0.18	NE.	10	225,090	6.59
94	27	1 B	8	573.02	568.27	4.75	0.05	0.01	0	0	221,310	6.45
95	27	1 B	8	573.00	568.24	4.76	0.05	0.02	NE.	3	216,840	6.44
96	29	14 B	7	573.10	568.29	4.81	0.06	0.05	SW.	5	221,100	6.45
97	29	14 B	7	573.18	568.32	4.86	0.06	0.04	SW.	3	226,820	6.60
98	30	14 B	7	573.21	568.36	4.85	0.02	0.07	SW.	8	225,000	6.54
99	30	14 B	7	573.15	568.32	4.83	0.09	0.09	SW.	8	221,910	6.45
100	30	1 B	8	573.15	568.32	4.83	0.10	0.03	SW.	10	226,880	6.60
101	31	1 B	8	573.20	568.36	4.84	0.03	0.06	SW.	8	228,010	6.62
102	31	1 B	8	573.20	568.39	4.81	0.00	0.03	NW.	15	222,950	6.50
103	31	1 B	8	573.08	568.34	4.74	0.04	0.08	NW.	15	223,430	6.53
104	31	1 B	8	573.11	568.33	4.78	0.12	0.00	NW.	15	226,560	6.57
105	Aug. 1	14 B	7	572.67	567.77	4.90	0.26	0.01	NE.	10	212,060	6.33
106	1	14 B	7	573.07	567.97	5.10	0.22	0.01	NE.	18	221,360	6.54
107	4	14 B	7	573.18	568.39	4.79	0.04	0.28	SW.	15	220,510	6.42
108	4	14 B	7	573.18	568.36	4.82	0.09	0.07	SW.	15-8	218,830	6.36
109	4	1 B	8	573.06	568.30	4.76	0.17	0.03	SW.	15	227,220	6.62
110	4	1 B	8	572.98	568.27	4.71	0.14	0.05	SW.	8	225,310	6.57
111	5	1 B	8	573.39	568.41	4.98	0.64	0.06	SW.	8	234,870	6.80
112	5	1 B	8	573.61	568.55	5.06	0.02	0.48	SW.	8	237,390	6.88
113	5	14 B	7	573.77	568.72	5.05	0.25	0.80	SW.	35	234,810	6.76
114	5	14 B	7	573.88	568.86	5.02	0.30	0.47	SW.	20	238,690	6.84
115	6	14 B	7	573.56	568.70	4.86	0.06	0.02	SW.	50	233,170	6.68
116	6	14 B	7	573.27	568.56	4.71	0.00	0.69	SW.	20	225,090	6.52
117	6	1 B	8	572.94	568.26	4.67	0.29	0.03	SW.	30	213,980	6.23
118	6	1 B	8	573.03	568.26	4.77	0.05	0.26	SW.	20	217,330	6.35
119	16	15 B	10	572.13	567.37	5.24	0.08	0.02	SW.	18	199,580	6.01
120	17	1 B	10	572.22	567.39	4.83	0.01	0.20	S.	15	203,420	6.14
121	17	14 B	10	572.18	567.37	4.81	0.11	0.03	S.	12	191,270	5.80
122	17	14 B	10	572.17	567.34	4.83	0.06	0.12	SE.	10	196,230	5.88
123	21	1 B	10	571.76	567.03	4.73	0.04	0.10	SW.	10	199,700	6.12
124	21	1 B	10	571.89	567.08	4.81	0.17	0.12	SE.	10	197,930	6.06
125	22	15 B	10	572.10	567.23	4.87	0.24	0.02	SE.	6	200,860	6.10
126	22	15 B	10	572.20	567.31	4.89	0.01	0.01	S.	18	200,290	6.06

On July 16 a portion of the field party was transferred to Niagara Falls to make preliminary arrangements for measuring the changes in the regimen of the river, which might result from the complete closure of the two power houses of the Niagara Falls Power Co., notice of which had kindly been furnished, betimes, by the officials of this company, who further stated that the closure would cover a period of a week or more. A box-and-bottle gauge was at once placed at the crest of the American falls and it was read at 5-minute intervals, day and night, to August 6. Another gauge of the same type was placed just above the intake of the Ontario Power Co. to determine any material changes which might take place in the diversion of that company.

The plant of the Niagara Falls Power Co. was closed at 1.30 a. m. July 19, and so remained until 12.30 a. m. July 28, when power house No. 1 resumed operations. On August 1 at 11.30 p. m. this power house was again closed to permit

removal of a bulkhead in the discharge tunnel, and on August 2 at 7.20 p. m. water was again admitted to the turbines of both power houses. The power houses were thus closed completely for a period of practically 10 days.

During this period all automatic gauges were inspected at frequent intervals, usually twice daily. Staff gauges at Port Day, at the head of the intake canal of the Niagara Falls Power Co. and at the forebay of the Ontario Power Co., were read once or twice each day. The water consumed by both the Niagara Falls Power Co. and the Niagara Falls Hydraulic Power and Manufacturing Co. was carefully determined by daily meter measurements. During the critical times of opening or closing the power houses of the Niagara Falls Power Co. a meter was run continuously in the intake canal of that company and the flow through the canal of the Niagara Falls Hydraulic Power and Manufacturing Co. was carefully watched; the automatic gauges were inspected at more frequent intervals; the gauge in the forebay of the Ontario Power Co. was read continuously at 10-minute intervals; and the record of the automatic gauges at Buffalo Breakwater and at Austin Street were reenforced by readings at 10-minute intervals on both reference gauges.

During this time the measurements of the flow of the river from the International Bridge were continued whenever the services of enough men could be spared from the other work.

On November 30, 1908, a very complete report, covering the results of the working seasons of 1907, 1908, and earlier work, and the conclusions therefrom, was submitted to the Chief of Engineers, and no attempt will be made to repeat here the subject matter of that report. A brief statement of results and conclusions will be found in the summary, pages 939-941.

Based upon the discharge measurements made in 1907, the officer then in charge of the supervision of operations of power and transmission companies under their War Department permits had imposed upon the Niagara Falls Power Co. a limitation to the production of 65,000 horsepower, measured at the switchboard. This limitation was based upon the relation between the actually measured discharges and concurrent switchboard readings.

Perhaps in the belief that the maximum capacity of its discharge tunnel was 8,600 cubic feet per second, the power company had during the progress of the measurements of the volume of its diversion made, so far as known, no special effort to restrict the volume of diversion by operating a minimum number of generators at maximum efficiency, and the above limitation seemed to have been in the nature of a surprise.

Early in the spring of 1909 the company made representations to the effect that a limitation to 65,000 electrical horsepower did not in fact, at all times and under all operating conditions, permit a diversion of 8,600 cubic feet per second, and requested that a series of discharge measurements be made in its intake canal, during the course of which operating conditions might be observed and varied under a prearranged program designed to establish the mechanical efficiency of various combinations.

As an unreasonably low limitation causes a considerable money loss to the company, on April 3, 1909, a project was presented covering an exhaustive series of tests under all reasonable conditions of operations. Based upon this project, an allotment of \$5,000 was made on April 15, and field operations have been in progress since May 4, 1909.

Automatic gauges were installed at Grass Island and Suspension Bridge on May 10, at the Whirlpool on May 13, and just below the intake of the International Railway Co. on May 21.

Since May 10 discharge measurements of the flow in the intake canal of the Niagara Falls Power Co. have been in progress, and on May 29 the first test load was placed on the generators. Good progress has been made upon the items of the agreed program, and at the close of the year the observations and reductions had been very nearly completed.

Final results are not yet available, but it is already known that with 6 or less generators in operation in power house No. 1 and not more than 16 in both power houses, 75,000 electrical horsepower may be generated without exceeding the authorized diversion.

During the year the operations of the power and transmission companies at Niagara Falls, under their respective permits from the Secretary of War, have been supervised, up to August 14, 1908, by Maj. C. W. Kutz, Corps of Engineers; since that date by this office.

At irregular intervals inspections of the various power houses have been made, and at such times switchboard registrations and other kindred data have

been investigated. During the fiscal year inspections were made on September 19 and December 10, 1908, and February 25, April 27-28, May 30-June 1, and June 15, 1909. An inspection was also made July 2, 1909.

Up to the present time, so far as disclosed by the inspections, all the companies have faithfully observed the conditions of their respective permits, and it is due them to say that they have courteously cooperated in making supervision easy and effective.

ANNUAL REPORT FOR 1910, BY BRIG. GEN. W. H. BIXBY, CHIEF OF ENGINEERS,
U. S. ARMY (PP. 1050-1053).

PRESERVATION OF NIAGARA FALLS.

The approved projects of operations under the various allotments from the appropriation made by the act of Congress of June 29, 1906, had for their purpose the determination of the effects of the diversions authorized by that act, amounting to 15,600 cubic feet per second on the American side, and on the Canadian side of water sufficient for the development and importation into the United States of 160,000 horsepower, upon the navigable capacity of the Niagara River, on its integrity and proper volume as a boundary stream, on the level of Lake Erie, and on the scenic grandeur of Niagara Falls.

The determination of these questions, so far as physically possible, involves surveys and measurements of levels, of volumes of discharges, of current velocities and directions, and of depths over the crest of the falls. As these are operations of a character similar to those ordinarily performed by the Lake Survey, upon the recommendation of the Chief of Engineers, the Secretary of War authorized the performance of the work involved therein by the Lake Survey, and for this purpose successive allotments have been made, of which two—one of \$5,000 and another of \$3,000—pertained to the fiscal years 1907, 1908, and 1909.

At the beginning of the present fiscal year operations were in progress upon the work covered by the project approved by the Secretary of War on April 15, 1909, for an allotment of \$5,000. These operations comprised a remeasurement of the flow in the canal of the Niagara Falls Hydraulic Power & Manufacturing Co.; measurement of the diversion in the canal of the Niagara Falls Power Co. for different combinations of generator units in the two power houses and for graded values of gate openings or loads; and further investigations of slope relations in the Niagara River.

The increased power being generated by the Niagara Falls Hydraulic Power & Manufacturing Co. indicated an increased diversion of water and, as the enlargement of its canal had rendered the previous measurements inapplicable, new observations were found necessary to an intelligent supervision of the operations of this company. Consequently, 43 measurements of flow through its canal were made during July, 1909, by the party employed under the above-named project. The maximum result obtained showed a diversion of slightly less than 4,000 cubic feet per second. The mean of the observations indicated that the company generated in its own power houses an electrical horsepower for each 0.0602 cubic foot of water used by its plant. In addition, a maximum of about 700 cubic feet per second was passing over the spillways or to tenant companies. At the time the measurements were made several of the mills taking water from the canal or power from the company were shut down. It is possible that had the measurements been made at some other time during the year the maximum of flow would have been larger, reaching possibly 4,500 cubic feet of water per second. Under its present permit the company is allowed to divert a maximum of 6,500 cubic feet per second.

As a result of the discharge measurements that were made in the canal of the Niagara Falls Power Co. in 1907 the company was limited by the officer then in charge of the supervision of the operations of the various power and transmission companies under their permits issued by the Secretary of War to the diversion of water necessary to generate 65,000 electrical horsepower. This limitation was derived by using the ratio between water consumed and power generated at the time of the observations, and is believed to represent with all fairness to the company its full rights under its permit according to the operating conditions then in practice. However, the officials of the company later represented that, owing to the variance in type of generator units in their two power houses, it was entirely practicable to operate with a higher mechan-

cal efficiency, and requested opportunity to cooperate with the Government in observing the relation between the volume of water diverted and the power generated under various practicable operating conditions. As any unduly low limitation of its output deprives the company of financial returns to which it is entitled the project presented on April 3, 1909, and approved April 15, proposed to conduct an exhaustive series of observations to determine the mechanical efficiency of the units of the company's two power houses while operating under different gate openings or degrees of lead. The field operations, which were based upon this project, were well advanced at the beginning of the fiscal year, 219 discharge observations having been made covering 29 different operating conditions. The observations were continued until August 3, 1909, when 336 measurements of flow in the canal, covering 53 test conditions, had been completed. A detailed report of this work was submitted upon September 21, 1909. Briefly summarized, these observations indicate a wide range of efficiency for variations in the opening of the turbine valves as well as between the generator units of the two power houses. This efficiency is determined as only 34 per cent in power house No. 1 at 50 per cent valve opening, while it is 72 per cent in power house No. 2 at full gate. It is found that, operating with the most economical combination of units and valve openings, the company can generate about 82,000 electrical horsepower without exceeding its allowable limit of 8,600 cubic feet of water per second, which amount includes 725 cubic feet per second being used in the mills of the International Paper Co. From the efficiency curves of the two power houses a table was deduced embodying with as great detail as seemed desirable the practicable operating combinations and their corresponding switchboard limitations, so that the total diversion of water should in no case exceed the limit prescribed by law. Since September 2, 1909, the Niagara Falls Power Co. has operated under the limits prescribed by this table (Table 10, report submitted September 21, 1909), in which 18 of the 19 combinations enumerated allow a switchboard output in excess of 65,000 electrical horsepower formerly prescribed.

The investigation of slopes in the Niagara River has been continued throughout the year, except for the winter months, when ice conditions prevented.

Since August 14, 1908, the supervision of the operations of the power companies at Niagara Falls under their permits—which are briefly summarized on page 895 of the report of the Chief of Engineers for 1908—has been performed by the Lake Survey office. After the departure of the hydraulic party the duty was performed by an employee stationed at Niagara Falls, N. Y., who has made inspections at frequent and irregular intervals, the detailed results of such inspections being placed on file in the Lake Survey office and a summary duly reported to the Chief of Engineers. In so far as the inspections disclose, all of the companies concerned have loyally observed the limitations of their corresponding permits.

To defray the expenses arising in connection with the supervision of operations of power and transmission companies and to make further investigations of slope relations in the Niagara River and related subjects, the Secretary of War on June 17, 1910, allotted the additional sum of \$1,000 from the appropriation of June 29, 1906.

Amount appropriated by act of June 29, 1906.....	\$50,000.00
July 1, 1909, balance unexpended.....	33,477.06
June 30, 1910, amount expended during fiscal year.....	5,966.47
July 1, 1910, balance unexpended.....	27,510.59
July 1, 1910, outstanding liabilities.....	78.87
July 1, 1910, balance available.....	27,431.72

(See Appendix G G G 2.)

APPENDIX G G G 2 OF THE ANNUAL REPORT OF THE CHIEF OF ENGINEERS FOR 1910,
PAGES 2722-2725, BEING REPORT BY THE LOCAL OFFICER, MAJ. C. S. RICHIÉ,
CORPS OF ENGINEERS.

PRESERVATION OF NIAGARA FALLS.

At the beginning of the fiscal year operations were in progress under an allotment of \$5,000, approved on April 15, 1909, by the Secretary of War, for the purpose of measuring the flow through the canal of the Niagara Falls

Hydraulic Power & Manufacturing Co., rating the turbines of the Niagara Falls Power Co., and continuing the study of slopes in the Niagara River.

The field party, under the charge of Junior Engineer Sherman Moore, was engaged on July 1, 1909, in measuring the consumption of water by the plant of the Niagara Falls Power Co. This company cooperated with the Government in conducting a series of tests of the efficiency of its generator units under different operating conditions. This work was suspended temporarily on July 18, and the party was engaged from then until July 30 upon hydraulic measurements in the canal of the Niagara Falls Hydraulic Power & Manufacturing Co.

The value of the data obtained by the observations in the canal of the latter company in 1907, and included in the report of this office, dated November 30, 1908, had been nullified by the enlargement of the canal and by changes in the company's power house. Obviously, an efficient supervision of the operations of the company under its permit necessitates a knowledge of the approximate amount of water being used. To this end the party made a series of 43 determinations of flow through the canal. The section used was at the lower (northern) edge of the Main Street Bridge. While not entirely satisfactory, on account of the proximity of the forebay, the conditions here were better than at either of the sections used in 1907. Two complete sets of soundings were made, giving areas differing by only 0.7 per cent. The section was divided into five panels of 20 feet each, and vertical velocity curves determined in the center of each panel and also 2½ feet from each wall. The observations of discharge were grouped by days and compared with the generated power of the company's turbines, showing a mean diversion of 0.0602 cubic foot per second for each electrical horsepower developed. Owing to the unfavorable conditions in the canal, due to an uneven bottom and to the dredging and blasting which were in progress, the results obtained may be 3 or 4 per cent in error. As the present diversion of the company was found to be well within the limit of its permit, no greater accuracy was attempted. Changes in the canal will necessitate further measurements when the water consumption of the Niagara Falls Hydraulic Power & Manufacturing Co. approaches its limit under the law. The maximum flow observed in July, 1909, was 3,966 cubic feet per second. At this time several of the mills taking water from the canal or power from the company were shut down. It is probable that measurements taken at other times during the year would have shown a maximum consumption of about 4,500 cubic feet per second. Under its permit the company is allowed to divert 6,500 cubic feet per second from the upper Niagara River.

The hydraulic work on the canal of the Niagara Falls Power Co. was resumed on July 31 and continued until August 3, 1909. The field party, after a few days' work on the preparation of its report, was then detailed to duties under the appropriation for Survey of Northern and Northwestern Lakes, and was so occupied during the remainder of the year.

The operations of the party during its work upon the canal of the Niagara Falls Power Co. were conducted with a view of determining the relation of diversion and the production of power as measured at the switchboard for all reasonable conditions of operation of the company's plant.

Based upon the discharge measurements made in 1907, the officer then in charge of the supervision of operations of power and transmission companies under their War Department permits had imposed upon the Niagara Falls Power Co. a limitation to the production of 65,000 horsepower, measured at the switchboard. This limitation was based upon the relation between the actually measured discharges and concurrent switchboard readings, and is believed to have represented with all fairness to the company its full rights under its permit according to the operating conditions then in practice.

Early in the spring of 1909 the company made representations to the effect that a limitation to 65,000 electrical horsepower did not, in fact, at all times and under all operating conditions permit a diversion of 8,600 cubic feet per second, and requested that a series of discharge measurements be made in its intake canal, during the course of which operating conditions might be observed and varied under a prearranged program designed to establish the mechanical efficiency of various combinations.

A project for the expenditure of an allotment of \$5,000 from the appropriation of June 29, 1906, which included a proposed rating of the turbines of the Niagara Falls Power Co., was approved by the Secretary of War on April 15, 1909, as stated above, and the field party began its operations on May 4, 1909. At the beginning of the fiscal year 219 discharge observations had been made, and at the conclusion of the field work, on August 3, 336 measurements of flow in the canal of the Niagara Falls Power Co. had been completed. These meas-

urements covered a series of 53 test conditions of operation of the company's plant according to a prearranged program. A detailed report of this work was submitted to the Chief of Engineers on September 21, 1909. The results of the observations indicate a wide range of efficiency for different openings of the turbine valves and also for the generator units of the two power houses. For instance, the efficiencies determined for the units in power house No. 1 at 50 per cent and 100 per cent valve openings are 34 per cent and 58 per cent, respectively, while the efficiencies in power house No. 2 for the same openings of the gates are 52 per cent and 72 per cent. It is found that the company, operating with the most economical combination of units and valve openings, can generate about 82,000 electrical horsepower, as measured at the switchboard, without exceeding its allowable limit of 8,600 cubic feet per second diversion.

A series of 276 measurements of flow was made in the canal of the International Paper Co., a tenant of the Niagara Falls Power Co., during the progress of the work on the main canal. From the results it appears that the maximum capacity of the paper mill is 725 cubic feet per second. As it is not practicable to maintain a constant supervision of the operations of the paper company, its maximum capacity is deducted from the allowable diversion of the Niagara Falls Power Co. and the remainder, 7,875 cubic feet per second, is used as a basis for regulating the operations of the latter company. This is apparently satisfactory to all concerned.

From the efficiency curves of the two power houses of the Niagara Falls Power Co. the following table was deduced, embodying with as great detail as seemed desirable the practicable operating combinations, and their corresponding switchboard limitations, so that the total diversion of water should in no case exceed the limit prescribed by law.

U. S. LAKE SURVEY—PRESERVATION OF NIAGARA FALLS.

Operating limitations of Niagara Falls Power Co., effective after September 2, 1909.

Units in operation.			Permissible output.			
			Valve in No. 1 no less than 50 per cent.		Valve in No. 1 no less than 75 per cent.	
Total.	No. 1.	No. 2.	Kilowatts.	Approximate horsepower.	Kilowatts.	Approximate horsepower.
15	4	11	Unlimited.	Unlimited.	Unlimited.	Unlimited.
15	5	10	Unlimited.	Unlimited.	Unlimited.	Unlimited.
15	6	9	Unlimited.	Unlimited.	Unlimited.	Unlimited.
15	7	8	Unlimited.	Unlimited.	Unlimited.	Unlimited.
15	8	7	Unlimited.	Unlimited.	Unlimited.	Unlimited.
16	5	11	60,400	80,900	60,400	80,900
16	6	10	58,600	78,500	58,600	78,500
16	7	9	56,900	76,200	56,900	76,200
16	8	8	55,100	73,800	55,300	74,100
16	9	7	52,600	70,500	53,600	71,800
17	6	11	55,200	74,000	55,200	74,000
17	7	10	53,400	71,600	53,400	71,600
17	8	9	52,100	69,800	52,100	69,800
17	9	8	49,600	66,500	50,600	67,800
18	7	11	49,900	66,900	51,500	69,000
18	8	10	48,200	64,600	50,200	67,300
18	9	9	46,100	61,800	49,000	65,700
19	8	11	45,400	60,800	49,000	65,700
19	9	10	44,000	59,000	48,100	64,500
Operation not limited.			40,000 kilowatts.		53,600 horsepower.	

NOTE.—This schedule is based on 7,875 cubic feet per second of water available in plant of Niagara Falls Power Co. and 725 cubic feet per second in the plant of the International Paper Co.

Since September 2, 1909, the company has operated under the limits prescribed by this table. It will be noted that for 18 of the 19 combinations enumerated the switchboard output exceeds 65,000 electrical horsepower, formerly prescribed.

Automatic gauges were maintained throughout the season of 1909 at Grass Island, Horseshoe Falls above the Cataract, Suspension Bridge, and Whirlpool. They were discontinued during the winter on account of ice conditions. In the early spring of 1910 the gauge formerly at Grass Island was installed at Chip-pawa and the other three gauges were replaced in their former positions.

Since August 14, 1908, the supervision of the operations of the power and transmission companies at Niagara Falls, under their permits, which are briefly summarized on page 895 of the Report of the Chief of Engineers for 1908, has been performed by the Lake Survey Office. After the departure of the hydraulic party in August, 1909, this duty was performed by an employee stationed at Niagara Falls, N. Y., who has made inspections at frequent and irregular intervals, the detailed results of such inspections being placed on file in the Lake Survey Office and a summary duly reported to the Chief of Engineers. In so far as the inspections disclose, all of the companies concerned have loyally observed the limitations of their corresponding permits.

To defray the expenses arising in connection with the supervision of operations of power and transmission companies, and to make further investigations of slope relations in the Niagara River and related subjects, the Secretary of War, on June 17, 1910, allotted the additional sum of \$1,000 from the appropriation of June 29, 1906.

STATEMENT OF MR. MORRIS COHN, JR., OF NIAGARA FALLS, N. Y., REPRESENTING THE HYDRAULIC POWER CO., OF NIAGARA FALLS.

The CHAIRMAN. Mr. Cohn, we have time, if you would like to be heard now.

MR. COHN. I think I may fairly take just a moment to state clearly what the situation is there at Niagara Falls respecting power companies. There are two power companies on the American side—the Hydraulic Power Co. and the Niagara Falls Power Co. They are interested in that part of this act which relates to the diversion of water upon the American side. There are three power companies on the Canadian side—the Ontario Power Co., the Canadian Niagara Power Co., and the Electrical Development Co., so called. They develop power on the Canadian side and are only interested in the question of importation of power into the United States. None of these companies has any relation to any other company, except that the Niagara Falls Power Co. and Canadian Niagara Power Co. are allied. So that there are four different, distinct power interests one of which is interested both in development on the American and Canadian sides and in importation; two of which, on the Canadian side, are only interested in importation; and the company which I represent is interested only in diversion on the American side of the river. Gen. Greene was asked a question here as to the feature of the bill which limited the diversion of water to those who are now engaged in the development of power, and he responded, after some hesitation, in answer to an inquiry, that he thought that that should be eliminated. He has no interest, as I take it, in the proposition, while we have, and his remarks in that respect must not be taken as an indication on the part of anybody interested directly in a power-development proposition on the American side that this limitation for diversion to the existing companies is distasteful to them.

GEN. GREENE. I was particularly called upon to answer that question as a disinterested party.

Mr. COIX. Yes; I understand. I did not want any misunderstanding on that point—that is, that no power company represented here—the power company I represent, at least—that no power company up to date which is interested in diversion on the American side has expressed up to this time its willingness to have that provision eliminated.

Mr. MADDEX. You express opposition to the elimination?

Mr. COIX. I think that my statement that follows will show that it will be entirely unjust and unfair to us to eliminate that clause and I think I can make that plain.

Mr. MADDEX. Give us your reasons now.

Mr. COIX. The Hydraulic Power Co., which I represent, is the oldest developer of power at Niagara Falls. The commencement of its canal construction was nearly 60 years ago, and it and its predecessors have been engaged in this work of development ever since. It started in in developing power by virtue of its riparian rights as the owner of land adjoining the river. All of the land from the intake of its canal at Port Day to the Falls of Niagara was originally owned by Augustus Porter and his heirs, and they sold the land to the predecessor of this company, which built its canal from a point called Port Day, about a mile above the Falls, to a point below the Falls, and commenced development as long ago as 1857. All of these lands were then owned by a single individual, or family, from the brink of the Falls to the intake of this canal. At common law this company and its predecessors had the right to take all the water it could for the purposes for which it took them, so long as it restored them to the river, and it has that right against everybody in the world excepting a lower riparian owner. That was its common-law right, which has been adjudicated by the courts of the State of New York.

This power development gradually proceeded by the Hydraulic Power Co. and its predecessors, until about 1890 the second development, that of the Niagara Falls Power Co., began on the American side. That development began higher up, and that company, I think, fairly recognized from the start that the rights of the company that began this higher development were subordinate to the rights of the Hydraulic Power Co., if any question ever arose between them, as was quite improbable. Meantime, the State of New York had taken all the lands from the intake of our canal to the brink of the Falls for a public park, and the question arose whether the State of New York, as a lower riparian owner, could not question the taking of water by the Hydranlic Co. So that in 1896 the State of New York, being the lower riparian owner, made a grant, by act of the legislature, to the Hydraulic Power Co., allowing it to take from the river as much water as could be drawn through a canal 100 feet in width and 14 feet in depth. That has been computed to be 9,500 cubic feet per second. The International Waterways Commission, which was appointed under the act of 1902, made a report in 1906, which preceded the Burton bill, and it recommended in terms that the Hydraulic Power Co. should have 9,500 cubic feet of water per second. That report is as follows:

They recommended that a bill should be enacted whereby the Secretary of War should be authorized—

to grant permits for the diversion of 28,500 cubic feet per second, and no more, from the waters naturally tributary to Niagara Falls, distributed as follows.

Now, mind you, the International Waterways Commission in terms recommended the specific companies, by name, in the bill, and—

that the Secretary of War be authorized to grant permits for the diversion of 28,500 cubic feet per second, and no more, from the waters naturally tributary to Niagara Falls, distributed as follows:

	Cubic feet.
Niagara Falls Hydraulic Power & Manufacturing Co.....	9,500
Niagara Falls Power Co.....	8,600
Erie Canal or its tenants.....	400
Chicago Drainage Canal.....	10,000

That was just preceding the enactment of the Burton bill. The report is dated March 24, 1906, and the Burton bill was introduced immediately afterwards. Then they recognized our rights in this report, and so stated. Under the common law we did have the unlimited right to take water restricted only by the State of New York, as the lower riparian owner, to 9,500 cubic feet per second.

Mr. YOUNG. You claim your right to use this water as being riparian owners?

Mr. COHN. Absolutely.

Mr. YOUNG. You deny that the State of New York, except as a lower riparian owner, has any right in those waters by virtue of its sovereignty?

Mr. COHN. It has no right to the waters; that has been adjudicated, that we have our rights by virtue of riparian ownership. The State of New York undoubtedly had the ownership of the bed of the river to the center of the stream; that has also been adjudicated. The only interest the Congress had in the matter at all, as it seems to me, was, in the first instance, because it was an international boundary stream; and, in the second instance, because it was a navigable river, and that was recognized by the Burton bill.

Mr. MOON. And that is a supreme and paramount interest in everything?

Mr. COHN. Yes; but it is not title. It is control for certain purposes.

Mr. MOON. That gives the Federal Government undisputed power over this proposition.

Mr. COHN. For those purposes; yes.

Mr. MADDEN. Do you contend you could take the water for the development of water power without getting authority from anybody because of the fact that you were riparian owners?

Mr. COHN. That was done for upward of 30 or 40 years by this company, was adjudicated by the highest courts of the State of New York, and it was recognized by the act of the State of New York that we had the power as riparian owners. Truly, all waters are subject to the jurisdiction of Congress so far as its control has any relation to navigation or to international defenses.

Mr. MOON. Right there, is not Congress the sole and absolute judge of that question, and acts on its own discretion regardless of your rights, and you have no right to complain of its action?

Mr. COHN. I should not be willing to accede to that proposition. I should say Congress had the right so far as it was essential to the preservation of those powers.

Mr. MOON. Who is to determine that right?

Mr. COHN. In the first instance, Congress.

Mr. MOON. That settles the whole question, then.

Mr. COHN. But, if in the exercise of a power, it went beyond the necessities of the case, the exercise of its power might possibly be reviewed.

Mr. MOON. By whom?

Mr. COHN. That question does not come up here.

Mr. LAWRENCE. Who is going to say whether it has gone beyond the necessities in maintaining a boundary stream?

Mr. MOON. That being true, it makes altogether unnecessary the discussion of your common-law rights in the matter.

The CHAIRMAN. You do not dispute the power of Congress here and now to pass the Burton bill or to pass a bill enabling the treaty to be carried out?

Mr. COHN. I assume, of course, Congress should pass a bill to carry out the provisions of the treaty. But I want to call attention to the purposes for which they have exercised this power, as stated in the act, that they said the power of the Secretary of War should be so exercised that he should not grant permits which would "injure or interfere with the navigable capacity of the river"—that was the point—"or its integrity and proper volume as a boundary stream." Those are the essentials of jurisdiction of Congress, although they did also insert "scenic grandeur of Niagara Falls," a matter which, I take it, Congress has no jurisdiction over. The Burton bill was carefully framed; the author of that measure took some pains in putting in the purposes beyond which the Secretary of War should not go, that it should not interfere with the navigation of the stream, and that it should not interfere with its integrity and proper volume as a boundary stream. There is not any claim, and would not be any claim, that all the water that has been taken from the river by all the companies would interfere with the stream as to any one of those purposes. The Niagara River is not navigable at that point.

Mr. LAWRENCE. The author of that bill put in something about preserving the scenic grandeur, did he not?

Mr. COHN. He put that in, and that was something that might have been the ultimate purpose of the bill. He was not willing to rest the bill upon the power of Congress to preserve the scenic grandeur of Niagara, however, and if he had left the bill in the form that that was the only basis of jurisdiction assumed by Congress, I take it, by this time the bill would have been declared unconstitutional.

Mr. LAWRENCE. Let us give him credit for having the courage to put it in.

Mr. MOON. He might have thought, too, being a boundary proposition, he had a right to preserve it in its original state, thereby preserving the scenic beauty.

Mr. COHN. As an incident.

Mr. MOON. As a matter of right.

Mr. COHN. Preserve it as a boundary. But since that time the Secretary of War, acting under this Burton bill, has granted the permit to the Niagara Falls Power Co. for the full amount of 8,600 cubic feet, which the International Waterways Commission recommended; but when he came to make his grant to the Hydraulic Power Co. he granted it 6,500 cubic feet.

Something has been said here about a provision in this bill which limits it to existing companies, and talk has been had about giving water to the existing companies. So far as the company I represent is concerned, we do not feel that it is quite in the nature of giving us some water; it is merely not taking something from us to which we have the right at common law. If the Secretary of War, for instance, should give a permit to some other company, he would be taking away from us.

Mr. MOON. If you have the right to it, what do you come to us at all for?

Mr. COHN. I do not say we have a right, but I say this, we are not asking Congress to give us something.

Mr. MOON. Yes; you are doing that very thing. If you have a right, you do not have to ask us; if you have not, you have to ask.

Mr. COHN. If there was no legislation on this subject we would have the right as riparian owners.

Mr. LAWRENCE. You ask it on equitable grounds?

Mr. COHN. Yes.

Mr. YOUNG. Is not your position just this: That subject to the controlling power of Congress for the purpose of preserving navigation and a boundary stream, you, as riparian owners, subject to this power of Congress, have the absolute right to the water?

Mr. COHN. You expressed it precisely and with great accuracy.

Mr. YOUNG. And it would be an injustice to take it away from you and give it to somebody else.

Mr. COHN. Under the guise of protecting the navigability of the stream, and under the guise of protecting it as an international boundary, to take it away from us and give it to somebody else would be, as it seems to me, a very rank and palpable injustice.

Mr. MADDEN. If you were entitled to 9,500 cubic feet a second, under the legislation enacted by the State of New York, why was it that the Secretary of War only granted you a permit to take 6,500?

Mr. COHN. He only had the power under the Burton bill to give 15,600, and he distributed that 6,500 to us and 9,100 to the others.

Mr. MADDEN. The Niagara Falls Power Co. got 100 per cent?

Mr. COHN. Got 100 per cent of the recommendation of the International Waterways Commission.

Mr. MOON. Is the situation such that no other power plants could be erected except yours and the ones there?

Mr. COHN. I should say it would be a very difficult thing. I am not enough of an engineer to pass upon all the possibilities.

Mr. MOON. Have no other people riparian rights along that river?

Mr. COHN. None in the city of Niagara Falls. The Niagara Falls Power Co. owns from our plant up to the boundary line of the city, 2 or 3 miles beyond.

Mr. MOON. And you have everybody shut out now except yourself?

Mr. COHN. We have only our own strip of land 100 feet wide. We have been there 60 years, and have never tried to shut out anybody.

Mr. MOON. But, according to your legal status as riparian owners, there is nobody else who has any rights there as a riparian owner?

Mr. COHN. No one has any rights superior to ours.

Mr. MOON. I mean if they had any at all they would be equal?

Mr. COIX. I think they would be inferior, because we, being the lower, claim superior rights.

Mr. MOON. As a riparian owner below another you would have a superior legal right!

Mr. COIX. I think that is unquestioned.

Mr. MOON. How about the ones ahead of you?

Mr. COIX. Those below would be ahead of us; the State of New York was ahead of us.

Mr. MOON. Suppose an individual was there; you say you are the lower and therefore you have a right superior to the one immediately above you?

Mr. COIX. That is right.

Mr. MOON. Suppose there is one below you, then he would have a right over you, would he not?

Mr. COIX. There is one, the State of New York.

Mr. MOON. And there may be room for another?

Mr. COIX. No; there is none.

Mr. MOON. Then you have to give all this power to the fellow below you?

Mr. COIX. But we have made our arrangements with the fellow below us.

Mr. MOON. You have a combination with them, have you?

Mr. COIX. No; they say we can have so many feet per second.

Mr. MOON. Can you see any reason why a person who can put a plant in there above or below you should not have an equal right with you?

Mr. COIX. Yes. The right of a riparian owner to take away from any navigable stream, or other stream, is a corporeal hereditament, as much a part of the ground as a tree upon it, as much a part of the ground as a rock upon it, as much a part of the ground as a mine below it, and repeated adjudications of courts have so held.

Mr. MOON. It is not a corporeal hereditament that is superior to the right of Congress?

Mr. COIX. No; I should say just as the gentleman said a little while ago, that subject to the right of Congress to control the waters of the Niagara River for those purposes for which it has jurisdiction our right comes next.

Mr. MOON. You are in the very anomalous position that because you are a riparian owner, although there may be others above and below you who have riparian rights, you have a superior right to anybody else, and Congress ought to recognize you?

Mr. COIX. I say we have a riparian right which has been adjudicated; that Congress has control of the stream for the purposes of the Federal Government.

Mr. MOON. I understand that; but that is a matter of discretion, whatever Congress determines about it.

Mr. COIX. But ought Congress to exercise its discretion about navigation or about an international boundary, and in the doing of that take water to which otherwise we would have a legal right and give it to somebody else? That is the proposition.

Mr. MOON. You have three-fourths of all the water now yourselves, the two concerns that are there?

Mr. COIX. Three-fourths of all; that is, under the treaty.

Mr. MOON. And the balance the Government has the right to use under the treaty ought to be given to you alone, to the exclusion of the balance of the world?

Mr. COHN. My position is this, that up to 9,500 cubic feet, which we have the right to use, the water should come to us in the first instance before it goes to anybody else.

(Thereupon, at 1.10 o'clock p. m., a recess was taken until 2.30 o'clock p. m.)

AFTERNOON SESSION.

COMMITTEE ON RIVERS AND HARBORS,
HOUSE OF REPRESENTATIVES,
Friday, January 6, 1911.

The committee reconvened at 2.30 o'clock p. m., Hon. D. S. Alexander (chairman) presiding.

The CHAIRMAN. I have here a letter from Mr. Charles Bennett Smith, the Congressman-elect from the Buffalo district, which I will read and make a part of the hearing. This letter is as follows:

BUFFALO, N. Y., *January 3, 1911.*

HON. D. S. ALEXANDER,
Chairman Rivers and Harbors Committee.

Washington, D. C.

MY DEAR SIR: I shall be unable to attend the hearing on your bill, which relates to the diversion of water from the Niagara River for power purposes. However, I desire to protest against the passage of the bill, for the following reasons:

It violates the principle laid down by Gov. Hughes in his recommendations with reference to the conservation of natural resources in the State of New York.

It is in direct hostility to the provision in the New York State law relating to the development of power from the St. Lawrence River at the Long Sault Rapids.

It is contrary to the principles of Gov. Dix, as outlined in his public addresses since his election as chief executive of the State of New York.

It grants a permanent franchise to develop power and provides no restriction as to price and no regulation as to its sale.

It should not be advanced in the House of Representatives without the attitude of the State of New York having been first ascertained, since the power to be developed under the act would be sold in this State.

Will you be good enough to make my position known to the committee, and greatly oblige.

Very truly, yours,

CHARLES BENNETT SMITH.

I have also a letter here from the secretary of the Chamber of Commerce and Manufacturers Club of Buffalo, New York, dated January 3, 1911, which reads as follows:

CHAMBER OF COMMERCE AND MANUFACTURERS' CLUB,
Buffalo, January 3, 1911.

Recommendations for amendments to bill H. R. 26688 for Congressional Committee on Rivers and Harbors.

Whereas the Real Estate Association of the Chamber of Commerce and Manufacturers' Club, of Buffalo, N. Y., after several weeks' consideration, during which time authorities on several sides were heard, passed a recommendation looking toward the amendment of the bill (H. R. 26688), now before the Congressional Committee on Rivers and Harbors, and

Whereas, after reference by the board of directors of the Chamber of Commerce and Manufacturers' Club to the National and State Affairs Committee, that committee, after hearing the several sides, indorsed this proposed amendment; therefore, be it

Resolved, That we, the board of directors of the Chamber of Commerce and Manufacturers' Club, do hereby adopt that recommendation, and do accordingly urge upon Congress that the bill in question be amended so that the distribution of the additional 4,400 cubic feet of water per second to be taken from the Niagara River for power purposes under the terms of the treaty be at the disposition of the Secretary of War, in his discretion, and not be confined or restricted to any particular companies; and be it further

Resolved, That we do respectfully urge upon Congress that should the bill be enacted that Congress should then transmit to the Secretary of War therewith the following recommendation:

"That in the determination as to which company or companies shall be granted this additional diversion, consideration should be given to the question as to which of the applicant companies can produce and distribute to the consuming public the greatest amount of power at the lowest price."

The above resolutions were unanimously adopted by said board of directors at a meeting held Saturday, December 31, 1910.

FENTON M. PARKE, *Secretary*.

I will read also this resolution:

To the Congress of the United States of America:

Whereas there was introduced in the National House of Representatives on June 9, 1910, a bill known and designated as H. R. 26688 to amend sections 2, 3, and 5 of an act for the control and regulation of the waters of Niagara River, etc.:

And whereas the said act contains on pages 1 and 2 the following language: "Sec. 2. That the Secretary of War is hereby authorized to grant permits for the diversion, within the State of New York, of the waters of the Niagara River, above the Falls of Niagara, for the creation of power to individuals, companies, or corporations which are now actually producing power from the waters of the said river or its tributaries in the State of New York, or from the Erie Canal; but permits for diversion shall be issued only to the individuals, companies, or corporations as aforesaid, and not exceeding, to all individuals, companies, or corporations as aforesaid, in the aggregate a daily diversion at the rate of 20,000 cubic feet of water per second", etc.:

Now, in view of the fact that the bill as drawn conveys all surplus waters from above the Falls of the Niagara River which the United States may, under its treaty powers, bestow to existing water-power monopolies, thereby doing a great wrong and damage to the city of Buffalo and to the American Niagara frontier, we, the undersigned petitioners, residents of the city of Buffalo and of the said Niagara frontier, respectfully protest against the manifest purpose of the bill as revealed in its wording, and do urgently petition the Congress to so change the spirit and wording of the act as to authorize the Secretary of War to give the unappropriated waters covered by the act to that company or corporation which can and will develop the largest amount of power from the volume of water which the Secretary of War is empowered to give away, and which will give to the public the greatest compensation for the use of such waters; and which will further contribute most to the sanitation and well-being of the city of Buffalo and the inhabitants of the Niagara frontier in the State of New York.

Respectfully submitted,

L. P. FUHRMANN, *Mayor*.

HARRY FISHER,

Alderman Seventeenth Ward.

FRANCIS E. FRONCZAK, M. D.,

Commissioner of Health.

FRANCIS G. WARD,

Commissioner of Public Works.

HENRY ADSEI BULL, *Councilman*,

WILLIAM H. RYAN,

ROBERT H. REED,

Mayor, Lackawanna.

JAMES J. MORAN,

Mayor, Lockport, N. Y.

PHILIP J. KELLER,

Mayor, Niagara Falls, N. Y.

ROBT. J. TALBOT, M. D.,

Health Officer.

G. T. SMITH,

Publisher Cataract Journal.

Niagara Falls.

LOUIS F. FICK,

Mayor, North Tonawanda, N. Y.

F. W. BENTLEY,

Health Officer,

North Tonawanda, N. Y.

ORIN J. COLBURN,

Supervisor of Colden, N. Y.

W. H. FOLLETTE,

CHARLES ZUCKMAIER,

Mayor, Tonawanda, N. Y.

Also we have a communication from the American Scenic and Historic Preservation Society, practically in line with Mr. McFarland's argument. Mr. Cohn, will you proceed now?

**STATEMENT OF MR. MORRIS COHN, JR., OF NIAGARA FALLS,
N. Y.—Continued.**

Mr. COHN. I shall try to be brief in what I have yet to say. The Burton bill, as indicated, limited the amount of permits for diversion on the American side to considerably less than the International Waterways Commission reported. The bill was enacted, and we have conducted ourselves in conformity with the act. One of the purposes of the Burton bill was, as I understand it, to urge, and to have it used as a lever, to procure a treaty with the Canadian Government and its representatives. Now, the only people I know of who made any representations to the American Government to procure in the treaty an increase in the amount of the diversion on the American side were the two existing companies, and whatever increase of diversions is allowed by the treaty over that allowed by the Burton bill it seems to me must necessarily have been made upon the representation of the Niagara Falls Power Co. and the Hydraulic Power Co., and therefore it occurs to me that the treaty must have been enacted with a view to the necessities of those two companies. This bill is not in the form at all that the Hydraulic Power Co., of Niagara Falls, would prefer. From our point of view you can see, from what I have stated, that a bill which would direct the Secretary of War to prevent a diversion of power in excess of 20,000 cubic feet per second and to leave to the companies themselves, or the users, the question of their rights in and to that 20,000 cubic feet to be determined by the laws that existed before the Burton act was passed, would be far preferable: but we have faith that our position is so strong that it could not be denied by the Secretary of War, and therefore the enactment of this bill would be a step in the right direction. A simple act instructing the Secretary of War to see that the treaty was enforced, and leaving it to be determined what parties should have that 20,000 feet under the common law and the treaty rights would be preferable, but the bill in its present form would permit us to present our case to the Secretary of War. We have no interest in the question of the transmission of power from Canada, except that the more power that comes in from Canada, of course the greater the competition with our company, and I have nothing to say here on behalf of our company on that subject; but I do think, as a matter of policy—I personally think—that it is highly improvident on the part of the people of the United States to prohibit the importation of power from Canada, and that we ought to get here all that we can and as quickly as we can; and so far as this bill prohibits the limitation on the importation of power it is also a step in the proper direction.

The CHAIRMAN. Are there any further questions to be asked Mr. Cohn by the members of the committee? Mr. Powers, I think you told me you did not care to be heard, as Mr. Cohn had already represented the company that you represent?

Mr. POWERS. Yes; I think Mr. Cohn has said all that we care to say on that subject. Of course, I do not know whether any opportunity will be given to reply to those who may oppose our position or not. Of course we would like an opportunity to do so, if any opportunity is to be given.

The CHAIRMAN. Yes; of course that will be given. Mr. Corey, I think you suggested that Gen. Greene had covered your position?

Mr. COREY. Yes.

The CHAIRMAN. Then we will hear you next, Mr. Lovelace.

STATEMENT OF MR. FREDERICK L. LOVELACE, SECRETARY OF THE NIAGARA FALLS POWER CO.

The CHAIRMAN. Will you give your full name to the stenographer, and also the companies that you represent?

Mr. LOVELACE. Frederick L. Lovelace; I am secretary of the Niagara Falls Power Co.

Mr. Chairman and gentlemen of the committee, at your general invitation to those on the frontier who are interested in the matter, in behalf of the Niagara Falls Power Co. I have availed myself of the honor as well as the pleasure to be present, but the matter seems so simple to me that I do not think there is much to discuss. The Burton law was passed expressly as a temporary measure, while the President of the United States should negotiate a treaty, which he was directed to do by the terms of the act, regulating between Great Britain and this country the limits of the diversion of water from the Niagara River. That treaty has now been negotiated, and, as some one has already said, is now the supreme law of the land, and it is a matter of duty for this Congress to make it effective so that the faith pledged by this Nation shall not be violated. The act as now drawn, it seems to me, is the simplest one possible to carry into execution that duty. After long and careful consideration by this committee, the Burton law was enacted, having been first referred to this committee. Great care was taken in the drafting of that law, and many months were consumed in its consideration. I do not agree that the result reached was a wise one, but my opinion may be from a biased viewpoint. Now, all that the present bill seeks to do is to remove restrictions from the Burton law which are not consistent with the treaty as negotiated. As far as the division of any additional amount of water permitted to be diverted by the treaty is concerned, I do not believe that it is a matter which should be discussed here. It has been discussed at some length by gentlemen before me, but the bill now relegates that to the Secretary of War, and it seems to me that all such discussion and all inquiries in regard to water distribution among existing companies or others is a matter for that official to inquire into and to determine.

The CHAIRMAN. You mean to say, Mr. Lovelace, the bill, as it is conceded it will be amended, refers it to the Secretary of War?

Mr. LOVELACE. Yes; it is now referred to the Secretary of War as it is, except, of course, that it restricts diversion to existing companies, a provision incorporated into the Burton law, not at the seeking of the existing companies, but at the request of the gentleman who first addressed you this morning, and it was an entirely consistent provision. That gentleman took the position, and all of the societies

back of him took the position, that diversion had gone far enough. The State of New York had granted many charters to other companies. They had not put them into effect. They had invested very little money in them, except for their plans. They should be stopped; diversion should go no further than it had already gone. It seems to me it was a consistent position for him to take then. He took it. It was incorporated into the law by this committee and was adopted by Congress. However, I understand you to suggest that this committee will now perhaps remove that feature from the bill. If it does, we will go before the Secretary of War and state our case and try to make it plain there. To those theorists who carry their heads in the clouds and revel in the pictures which their fancy makes, this may be a different question, but to us practical fellows who keep our feet on the earth it seems a very plain, practical question, and that there are no two courses for this committee to pursue. The duty is incumbent upon it, it seems to me, to put into effect the provisions of the treaty. The bill as now introduced does it in a very simple manner, considering that the Burton law is now the law.

The CHAIRMAN. I was reserving Mr. Randolph and Mr. Bowen until later. Was anyone else to speak, Mr. Bowen, in behalf of your project?

Mr. BOWEN. Not necessarily.

The CHAIRMAN. I was reserving you until a little later.

Mr. BOWEN. Very well.

The CHAIRMAN. To take up your project by itself.

Mr. MADDEN. Mr. Lovelace, will you let me ask you a question?

Mr. LOVELACE. Yes.

Mr. MADDEN. Have you any objection to the bill being so amended as to permit open competition for the water that may be diverted?

Mr. LOVELACE. Mr. Madden, as a matter of principle, as a matter of strict justice, I am in entire harmony with the theory advanced by Mr. Cohn on that subject; not entirely with the facts as stated, but with the theory. I will not now restate such facts as I understand them. I have already stated that if this committee shall deem it wise to strike out that provision our company will make no serious objection. We believe that our position in the matter is one that will commend itself to the Secretary of War or to any other official of the United States or other body which will inquire carefully into the facts. We have been greatly damaged by the undue restrictions of the Burton law. We have suffered much from it, suffered far beyond the intent, I think, of the framers of the Burton law, far beyond the intent of the gentleman who first addressed you this morning, as he told me in a personal conversation this morning.

The CHAIRMAN. In what respect?

Mr. LOVELACE. Because the amount of 8,600 cubic feet of water did not permit us to develop power from the installations which we already had in place when the Burton law was enacted. Our position in that respect is much stronger than that of any other company. Other companies since that time have gone on and made further developments. We had a development at that time which 8,600 feet of water did not take care of.

Mr. MADDEN. How much was the installation which you had in, at the time the Burton law went into effect, capable of developing?

Mr. LOVELACE. In horsepower?

Mr. MADDEN. Yes.

Mr. LOVELACE. The plant has been spoken of as a 100,000-horsepower plant. We had hoped to do somewhat better than that. We are restricted, of course, by the amount of water that will be discharged by our tunnel. How great an amount of electric power we can finally develop from the water thus discharged, with the very best perfected machinery, I can not now state; I am not an engineer, but it is somewhat above 100,000 horsepower.

Mr. MADDEN. You did not answer my question.

Mr. LOVELACE. Didn't I? I tried to. You asked me for it in horsepower.

Mr. MADDEN. You stated that the allotment of 8,600 feet of water per second to your company was not a sufficient quantity to enable you to utilize the plant which you had installed and through which you could develop a much larger horsepower—

Mr. LOVELACE. Yes.

Mr. MADDEN (continuing). Than the 8,600 cubic feet of water a minute would permit.

Mr. LOVELACE. In other words, you asked it in cubic feet per second?

Mr. MADDEN. That is practically what you said, if not in your words.

Mr. LOVELACE. Yes.

Mr. MADDEN. Now, I want to know how much installation you had, what was the capacity of the installation you had, through which this injustice was done you?

Mr. LOVELACE. I will answer you. We had installed 21 units. Each of those units was capable of developing at least 5,000 horsepower. Eleven of them were capable of producing upward of 5,500 horsepower each.

Mr. YOUNG. How many cubic feet of water was that?

Mr. MADDEN. That is what I want to get at.

Mr. LOVELACE. Substantially 2,000 cubic feet of water more.

Mr. YOUNG. More than you got?

Mr. LOVELACE. Yes; more than the restriction of 8,600 cubic feet imposed by the Burton law.

Mr. YOUNG. That is 10,600 feet?

Mr. LOVELACE. Yes; 10,600 cubic feet required for the installation in place.

Mr. YOUNG. Was that plant all complete at the time this limitation of 8,600 feet was fixed?

Mr. LOVELACE. It was.

Mr. MADDEN. And you have not been able to take advantage of the investment that was made prior to this allotment?

Mr. LOVELACE. We have not.

Mr. MADDEN. And can not, under the present allotment?

Mr. LOVELACE. Not until the restrictions are removed or liberalized. The justice of such liberalization is admitted by all who are correctly informed of the facts and competent to pass on the situation. Maj. Charles Keller, in command of the United States Lake Survey, the United States engineering body having supervision of operations under permits issued by authority of the Bur-

ton law, in his report to the Chief of Engineers under date of September 21, 1909, made the following statement:

The desirability, as well as the justice, of amending the Burton act so as to permit the Niagara Falls Power Company to divert water to the full capacity of its tail-race tunnel are plain.

STATEMENT OF MR. J. BOARDMAN SCOVELL.

Mr. SCOVELL. In appearing before you, Mr. Chairman and gentlemen of the committee, I am somewhat in the position of the distinguished speaker of this morning, Gen. Greene, when he was asked certain questions. Like him, I am entirely unbiased. I formerly was the attorney for the Niagara County Irrigation and Water Supply Co., one of the companies chartered by the State of New York to take water from the Niagara River for the production of power, which company has since been acquired by the General Electric, the data in regard to which are found in the hearing before this committee in 1906, from pages 15 to 45.

The CHAIRMAN. In a word, if I remember correctly, that company took the water from just above the rapids and carried it down to Devils Hole?

Mr. SCOVELL. Yes; to a point below the Whirlpool Rapids.

The CHAIRMAN. Yes.

Mr. SCOVELL. Of course, since the transfer of that charter to the General Electric interests, I have not been connected with it professionally, and I have been interested simply as a citizen of western New York, a resident of the town of Lewiston, where Devils Hole is located, and a practicing attorney in the city of Buffalo, and as one who desires to see the maximum amount of power made available on the frontier; and this bill is of great importance as bearing upon that issue. I feel that I should review the situation somewhat at length, and in such a way as to enable you quickly to grasp some of the principles involved, and I can do that by an exhibit of this picture of Gen. Greene's showing conditions at Niagara Falls. [Mr. Scovell here exhibited the picture referred to.] The American Falls, so called, is separated from the Horseshoe Falls, so called, by Goat Island; and the line of breakers, so called, is below the head of Goat Island, so that the water which is diverted below the line of breakers on either side can not affect the flow of water on the other side. On the American side we have a State park which extends practically from the edge of the American Falls to the point where the Hydraulic Power Co. takes its water from the Niagara River, above the line of breakers; and by the act creating our State park we are forbidden from diverting water inside of the State park for power purposes. Consequently, there can be no diversion on the American side which draws exclusively from the American Falls, whereas on the Canadian side you notice from this picture that the Electric Development Co. and the Canadian Niagara Falls Power Co. are both of them far below the line of breakers. It is a physical impossibility for the water drawn by either of these two companies in any way to affect the flow of water over the American Falls, as they divert wholly from the Horseshoe Falls. Gen. Greene's company is located right here, practically at the point at which the water breaks [indicating], and assuming, for the purposes of argument, that he actually diverts

from the river as such, the same as the two companies on the American side have to do, then his company diverts with the two American companies from the Niagara River as such, and therefore from the two falls in proportion to the respective flow over either; and Gen. Greene told you this morning that that flow over the American Falls only was about 4.5 per cent of the total flow over the two falls.

Now, the late President of the United States, I believe, in his communications to Congress affecting this matter confused the terms "American Falls" and "Horseshoe Falls" by using the term "Canadian Falls" instead of "Horseshoe Falls," and the permitted diversion on the American side was primarily based upon its effect in reducing the flow which goes over the American Falls. But, as a matter of fact, you can see that of the 15,600 cubic feet now diverted by the Hydraulic Power Co. and the Niagara Falls Power Co. only the proportion which flows over the American Falls is taken from the American Falls, or 4.5 per cent; and if you go on and allow the additional amount up to the maximum given by the treaty, of 20,000 cubic feet per second, only about 4.5 per cent, or 900 cubic feet per second, is going to be taken from the American Falls, and the engineer's report bearing upon the effect of diversion upon the American Falls is to the effect that less than four-tenths of an inch is diverted from the American Falls, whereas a larger amount is diverted from the Horseshoe Falls. The reason of that is, as I showed you, that only 4.5 per cent of the three diversions came from the American Falls, whereas 95.5 per cent of the three diversions and the whole of the other two diversions [indicating] came from the Horseshoe Falls. You can therefore understand how the diversion on the American side from the American Falls makes practically no perceptible difference in the flow. You can also understand how the diversion from the Horseshoe Falls may be so much as 2.5 inches (although I doubt it being as great as that), since it is affected by the present diversion on both the American side and the Canadian side. This is of interest as bearing upon the question of scenic beauty, and I speak of it at this point because I believe you are justified in ignoring the request of Mr. McFarland or his associates on that point, as any person sufficiently interested in the topography of the Niagara district to really investigate the situation and the location of the plants with respect to the State park and the line of breakers would come to the conclusion that I have just presented to you. The international boundary line may pass through the Horseshoe Falls just beyond Terrapin Tower Point, so that the United States are not entitled to as large a portion as Canada of the Horseshoe Falls, which is admittedly not all Canadian.

I approved heartily of the action of the Ontario Government park officials when they pushed out toward the line of deeper water, so that people could see the Falls better. They pushed out there and walled it in and made a parapet. It was for the beautification of the Canadian park that that was done, not from the standpoint of any power interests. It was scenic beauty that was sought for in the accomplishment of that result: and it might be well if the commissioners of the New York State Park would do the same thing on the American side as you approach from Goat Island down toward Terrapin Tower Point, so that the people may get a better place to see the Falls in its majesty and might. But that would be entirely within the

province of the State park commissioners, acting with a view to the preservation and enhancement of the scenic beauty of the Falls. I hope you will pardon me for having trespassed on your time in discussing this subject of the scenic beauty; but, passing now to the more practical point of the development of power, I will take up first this question of the importation of power. Under the Burton bill we are allowed to import into the United States 160,000 horsepower. That is a matter of permit of the United States; nothing which binds the Ontario or Dominion Government. There is no reason why that limitation should be put on. We are already using every foot-pound of power, every horsepower that is available on the American side, under the Burton bill. We are purchasing and importing, as stated by Gen. Greene this morning, over 100,000 horsepower additional from two Canadian companies. That shows the need of the United States and of the State of New York for power, and establishes conclusively that it is part of your duty to see that there be made available at the first possible opportunity all the additional water for power purposes that we may have on our own side of the river under the treaty.

I believe this limitation of 160,000 horsepower should be omitted from this bill in the way in which it is, so that we may import more power from Canada, and I do feel that the omission to have a determination of the right to import power from Canada, in the treaty itself, was a grave omission. The Province of Ontario, it is true, has said to the three power companies, "You may export half of your power until such time as it is needed here." The Dominion Government in negotiating this treaty through Ambassador Bryce has omitted any reference to the export of power, and is in position, absolutely regardless of the Province of Ontario, to positively prohibit it. I happened to be a shareholder in one of the Standard Oil's subsidiaries in Canada, which heretofore exported natural gas into the United States for use in the city of Buffalo, and the respect for existing contracts outstanding between our company and the city of Buffalo was not such as you would expect in the Congress of the United States, where you are accustomed to constitutional legislation. Canada, being as it is a parliamentary country, gives no constitutional guaranty of the obligation of contracts. The Dominion Government simply said to us, "We will permit you to export half of your gas if you will build a main to supply a certain city," necessitating a confiscatory assessment equivalent to 150 per cent of our total capital in order to build such main, and after two years the Dominion Government revoked its permit and absolutely forbade the exportation of natural gas, requiring it all to be sold in Canada, notwithstanding our contract. Now, that shows you the position that anyone who manufactures power in Canada and arranges to sell it in the United States is in, because even though they may have contracts for the sale of power throughout New York State, as far east as Syracuse, they may be obliged to increase the price because of the putting on of an export duty; and if there is a demand for that power in Canada, such an export duty will be put on to the extent of the necessity of forcing the retention in Canada of the power for use there. Therefore it is wise that we be allowed to have so much power as we can get imported from Canada, although I believe that the treaty should

be revised so that there will be no question about our right to import, because an export duty on power from Canada has the effect of increasing the cost to the consumers in the United States that a high tariff thereon by the United States would have.

The CHAIRMAN. Was that brought to the attention of the treaty commissioners?

Mr. SCOVELL. I personally brought the matter to the attention of the treaty commissioners, and I came here and worked for a week with the Senate of the United States in opposition to the treaty on that ground. In fact I understand the Hydro-Electric Power Commission of Ontario were represented here in that matter, because they wanted the assurance from the Dominion Government that they would be protected by an export duty if it became necessary, and when they got that assurance they withdrew their opposition to the treaty going through. So you see these things have an important bearing upon this question before you. You should allow this bill in its present form to go through, in order that we may have available as large an amount of imported power as possible.

The CHAIRMAN. You refer to the bill in its present form so far as it relates to the importation of power?

Mr. SCOVELL. Yes; you have omitted any reference to it, but by so doing have amended the Burton bill. If this bill passes, as drafted by you, there will be no limitation to 160,000 horsepower, as to what may be imported.

The CHAIRMAN. I understand, too, that you believe that the whole matter should be relegated to the Secretary of War to divide the 4,400 additional feet?

Mr. SCOVELL. I am just coming to that now. I think I have wasted your time sufficiently on the question of importation, but I do feel that this is of importance, and the question of maintaining the Burton bill's importation restrictions, as urged by Mr. McFarland this morning, in order to prevent Canada from developing unduly for export to the United States, should not receive consideration, because we need all the power we can get. The discrimination between the United States and Canada in the amount of water that the two countries are allowed can only be made up by importation, to any extent.

The CHAIRMAN. You understand why the Burton bill made that limitation?

Mr. SCOVELL. I do, quite well; and I understand also that the reason why we were allowed the 4,400 additional feet was in order to compensate us for not having any reference made in the treaty to the question of the limitation on imported power, if we should be ultimately excluded by a Canadian export duty or prohibition. Now, that is—

The CHAIRMAN. That is a new one.

Mr. SCOVELL. That is a new one, perhaps.

Mr. LOVELACE. It is a new one, all right.

Mr. MADDEN. Can you state how the international commission reached the conclusion that 20,000 cubic feet per second on the American side and 36,000 cubic feet per second on the Canadian side were the quantities of water that could be properly diverted without affecting the Niagara Falls?

Mr. SCOVELL. That was not met by the commission. That was met by those who had the negotiation of the treaty, purely.

MR. MADDEN. I understand you were closely identified with those who were negotiating the treaty?

MR. SCOVELL. I knew something of it, but I do not think I could say who had the fixing of that amount; but I will relate now another point. This bill says that the 4,400 additional cubic feet of water shall be divided between the two companies now producing power. You have heard the argument of Mr. Cohn this morning, in which he tells you, and very properly, in accordance with the statutes confirming the rights of the Hydraulic Power Co., that they have the right to take water through a canal of a certain width and of a certain depth at a certain rate of speed, which is sufficient to take 9,500 feet of water, and that they have a permit now to take 6,500 feet, or 3,000 feet less than what their canal is capable of taking under their charter, and they feel entitled to 3,000 of the 4,400 additional cubic feet allowed by the treaty. Now, the important factor, from the standpoint of western New York, is the question of conservation, the production of the maximum amount of power with the use of a limited quantity of water. There has been given to the Niagara Falls Power Co. 8,600 cubic feet of water. It is admitted by them that they can produce with each cubic foot of water 10 horsepower. That means that 8,600 feet of water will produce 86,000 horsepower. They have installed 21 units, capable of producing 105,000 horsepower, 1 unit being kept in reserve at all times for the purpose of taking the place of any unit which might be out of order, so that the company is known as a 100,000-horsepower company. Now, it will take to make the difference between 86,000 horsepower and 100,000 horsepower 1,400 cubic feet of water, which, plus the 3,000 cubic feet of water to which the Hydraulic Power Co. claims it is entitled, makes the 4,400 additional cubic feet exactly allowed by the treaty.

MR. MADDEN. And that matter was in the minds of the men who negotiated the treaty?

MR. SCOVELL. I assume that it was. I do not know, but there are the flat figures as presented to-day.

MR. MADDEN. Then it was not a question of scientific, mathematical calculation at all, upon the part of the engineers of the United States, that induced the negotiators of the treaty to come to the conclusion that 4,400 feet additional of water should be allowed, but the demand or the request of these two companies, the Hydraulic Power Co. and the other company, to which you referred?

MR. SCOVELL. I do not know to what extent the influence of the officials of one company or the other may have had its effect upon those who had the negotiation of the treaty, or upon the engineers of the United States who assisted in drafting this bill. The senior Senator from New York at the time, Senator Depew, had been a director of the Niagara Falls Power Co., I understand, as had Mr. Reid, the ambassador to Great Britain.

MR. LAWRENCE. What do you now understand is being developed by the Niagara Falls Power Co.?

MR. SCOVELL. Eighty-six thousand horsepower: 10 horsepower per cubic foot.

MR. LAWRENCE. Here is a statement which says:

The amount of power actually generated by the Niagara Falls Power Co. is substantially 90,000 electrical horsepower, maximum. In addition thereto, sub-

stantially 9,000 horsepower, in the form of hydraulic power, is generated by its said power tenants, operating under its rights, for power development.

Mr. SCOVELL. Yes; they are permitted to take water for a tenant sufficient to generate 9,000 horsepower, but that is hydraulic and not electrical.

Mr. LOVELACE. You have contradicted several times figures that I gave, and I think it is hardly fair to me.

Mr. SCOVELL. I understood you as using the figures as given there.

Mr. LOVELACE. No; I did not. I have given to the committee, in detail, exact figures of the installation of the Niagara Falls Power Co., made prior to the enactment of the Burton law, and now you are giving them in another form.

Mr. SCOVELL. At the time of the meeting of the Chamber of Commerce of Buffalo you stated that your Niagara Falls Power Co. were producing only 10 horsepower for each cubic foot of water taken by you, whereas the Hydraulic Power Co. stated that they were able, by reason of their greater head, to produce 20 horsepower with each foot of water. Now, it is to the interest of western New York that if we are only to take a limited amount of water from the Niagara River for the generation of power, that limited amount should be given to such corporations as can make it the most efficient in the generation of power, so that the people of western New York will have the maximum amount of power for use there. To that end I prepared, about a week after the treaty was promulgated, a bill amending the Burton bill, looking to the making of this 4,400 cubic feet of water efficient, and tried to get it introduced, but without success, before Congress. In that bill I gave to the Secretary of War this power:

Permitting such companies, corporations, and their assigns as shall satisfy the Secretary of War of ability to develop the maximum quantity of electrical power from such limited diversion of water.

Mr. MADDEN. In other words, you would give the preference to the company that would develop 20 horsepower from every foot rather than to the one who would develop only 10 horsepower?

Mr. SCOVELL. Yes; and I would take away the limitation from those companies now actually producing; and if any other chartered company could go in and satisfy the Secretary of War of its ability to produce a larger amount of power from the same limited amount of water, that the legislation adopted by Congress should modify the discretion given to the Secretary of War to the extent of reciting that the permit should be issued to such company as should satisfy him of their ability so to do.

Mr. YOUNG. Mr. Scovell, if you will permit me, I presume you are pretty familiar with all the legal questions growing out of this situation?

Mr. SCOVELL. I have written several opinions on it.

Mr. YOUNG. Yes. Now, what do you say to Mr. Cohn's proposition that by virtue of the shore ownership of his company, they have the exclusive right, subject to the control of Congress, to the natural flow of the water, or diversion of the water, whichever way you may put it, on their own land, without any reference to the rights of the State, and notwithstanding the fact that the State owns the submerged land?

Mr. SCOVELL. There is no question but that the State of New York owns the bed of the Niagara River out to the international boundary line, under the decision of our court of appeals and other higher courts.

Mr. YOUNG. Yes.

Mr. SCOVELL. So that so far as that is concerned the laws of the State of New York are well settled, and the diversion which was made by the Hydraulic Power Co. of Niagara Falls, in its original little canal for hydraulic power development, at that time was with the consent of the riparian owners who conveyed this land.

Mr. YOUNG. Yes.

Mr. SCOVELL. That land, the land below the diversion, between that and the crest of the Falls, subsequently and in 1884 became a State park, and to protect themselves they first sought in 1896 legislative action to protect themselves against the claim of the State of New York to be the riparian owner of land below them, to the edge of the Falls, and they have been confirmed in their right so far as that is concerned.

Mr. YOUNG. Now, assuming that to be a fact, that is, that they own the land, a certain portion, above the Falls, that they have acquired the right of the State as the riparian proprietor below that in the land running clear to the Falls—

Mr. SCOVELL. Yes.

Mr. YOUNG (continuing). Assuming that to be so, what right has the Congress of the United States, in the exercise of its power to protect navigation and preserve a national boundary, to attempt to take that right away from them and give it to somebody else who can give better service?

Mr. SCOVELL. I am glad you brought that up, because I wish to consider that specifically.

Mr. YOUNG. It seems to me it is a very important question.

Mr. SCOVELL. In my opinion the Burton act as originally drafted was clearly unconstitutional, and would have been so held had the time for which it was to operate been sufficient to have obtained a decision from the highest court. But the limited time during which it was to be in effect, only to enable the then President of the United States to negotiate an international treaty, made it practically out of the question to test its constitutionality, and therefore the efforts of all interested parties were diverted from the question of attack on the Burton bill to the question of what should the treaty itself contain, because the treaty is the supreme law of the land, which all citizens of the State have got to recognize.

Mr. YOUNG. Yes; but right there, the Governments by treaty between themselves can not affect the private rights of a citizen.

Mr. SCOVELL. The citizens have got to respect the terms of the treaty, and it is the supreme law of the land, and there is no court to which they can go for redress, except to apply through the Court of Claims after we get suitable legislation to that end for damages, and I doubt very much if even then that could be obtained, because the damage is due to an international act rather than to the act of this Government, acting by itself. But the treaty has taken effect.

Mr. YOUNG. But let me put this question to you: Supposing that some corporation or individual on the American side owned whatever

riparian rights there were there, and some other concern on the Canadian side owned whatever riparian rights there were on that side, what those rights were would be a matter of determination in the courts.

Mr. SCOVELL. Certainly.

Mr. YOUNG. How far they extended. Suppose, then, these two Governments by treaty between themselves tried to fix the riparian rights there at something entirely different from what the law would fix them, do you contend that that would be binding upon the owners of those rights?

Mr. SCOVELL. I am sorry to say that I do.

Mr. YOUNG. I never heard a lawyer express that opinion before.

Mr. SCOVELL. Because I can not see how I can get redress for the damage that has been wrought. In that case the Burton bill—and I will bring my argument around to that, if you will allow me—

Mr. YOUNG. Yes; but just a moment. See what will happen. Suppose the parties who seemed to be aggrieved by this brought suit, any kind of a proper suit, to recover either possession of the property or for the infringement upon it; the other side would plead the treaty. That would certainly bring the matter into the court for adjudication, and the question would be of whether that treaty was binding upon these private rights.

Mr. SCOVELL. I think it would be held that the treaty was binding, and the other man would have to give in, and that is why it is so important that the treaty should be right.

Mr. YOUNG. I am sorry I can not agree with you.

Mr. SCOVELL. The executive has a certain power. It has to be confirmed by the Senate, and it has to be confirmed before that power is exercised.

Mr. YOUNG. No one questions that a treaty within the jurisdiction of the United States is the supreme law of the land.

Mr. SCOVELL. Now, take the question of the next company up the river, if you like, the next riparian owner above, and we will concede, for the sake of argument, that this is the Niagara Falls Power Co. which has entered upon and begun the construction of a plant to take water for the development of power from the Niagara River under a charter granted by the State of New York. If the Hydraulic Power Co., which is lower down the river, should be injured, as the lower riparian owner it would have the right, when water was being diverted from the river, to question that diversion and to bring an action and enjoin, and if it did not do so within a reasonable length of time, it would be considered to be estopped by its own laches. The lower riparian owner has a right to divert, and is diverting under a charter from New York in this case, and so has the upper; and still another company has a right, the one formerly represented by me has the right, to take water still further up the river, and the question was raised as to its power to condemn, and we went to the appellate courts upon that issue, and the court took the same position, that the water of the Niagara River, although it flowed over State land, was not State property, but belonged to the man who first impounded it. In the matter of the constitutional question of whether it needed a two-thirds or a three-fifths vote to grant the right to take the water from the Niagara River, those questions were thoroughly

thrashed out in that case, so that I think there is no question of the relative rights of corporations holding charters from the State of New York to take water from the Niagara River, providing they take it within the limitations fixed by Congress under the treaty.

Mr. YOUNG. Do I understand you to deny, then, that a riparian owner, as such merely, has no right to use the water flowing by his land, but that he must go to the State to acquire that right, and that he has no greater right than a stranger?

Mr. SCOVELL. The riparian owner has the first right to the water flowing by his land. He has no right of injunction and has only a right to damages if a party, who diverts water from above him, diverts water that he does not need, or for which he has no use.

Mr. YOUNG. That is a question of damages.

Mr. SCOVELL. That is a question of damages. That is the only factor which comes in along that line of the argument.

Mr. YOUNG. But his bare right is recognized.

Mr. SCOVELL. There is no question about that. Now, there is present here the former engineer of the company to which I referred; he said in a hearing recently that that company could produce 24 horsepower for each foot of water. How economically that could be done is a question, but you heard this morning that the Ontario Power Co. is producing at from \$95 to \$100 per horsepower for its investment account. The investment account of the Niagara Falls Power Co. is much larger than that. The investment account of the Hydraulic Power Co. is less, those things being dependent upon the methods of developing power and also on the amount of head. The head of the Niagara Falls Power Co., as I understand it, is 136 feet. The head of the Ontario Power Co. is 178 feet. Is that correct?

Gen. GREENE. That is the net. It is 202 feet gross.

Mr. SCOVELL. The net head of the Hydraulic Power Co. is considerably in excess of 200 feet, is it not?

Mr. SCHOELLKOPF. It is 210 feet.

Mr. SCOVELL. That is what I understood; and the head which would be available by a company taking water above the rapids to below the lower rapids would be still greater, and so be made more efficient; and while I have no brief on behalf of any company, my sole contention in coming before you is that it is to the interest of the city of Buffalo and the other cities along the frontier, and distributing districts from there, that only such companies should receive the additional amount of water as can make it the most efficient in the generation of power. I think the Secretary should give consideration also to the capital cost per horsepower, as that is a factor in the question of the price at which it can be furnished to the people. As it is, the only chance of competition which we have on the American side is with imported power. But if this additional 4,400 cubic feet is divided between the producing companies, the only opportunity then of competition as against the two existing companies will be the importation of power, as to which we have no protection under the treaty. For that reason I have made the suggestions that I have in regard to the amendment of this bill. I had the pleasure yesterday of a conference with his excellency the governor of New York and his attorney general, and they felt that the committee should comply with the request embodied in the joint resolution of the Senate and

Assembly of the State of New York, in which you are asked to defer final action in this matter until after the new officials of the State could investigate what would be for the best interests of the State in this matter, and make recommendations.

Mr. LAWRENCE. That was the resolution that was passed yesterday?

Mr. SCOVELL. Day before yesterday. Now the question of what would be for the best interest of the State—

The CHAIRMAN. Was that passed day before yesterday?

Mr. SCOVELL. Yes.

The CHAIRMAN. We have not got our notification.

Mr. SCOVELL. The governor's message was read and this resolution was introduced and passed by unanimous consent, and I beg to furnish your committee with this certified copy of the joint resolution. (Paper handed chairman: see p. 537 of this report.) The question of importance here with you is that under the Burton law as drafted, as enforced, as acted upon by the Secretary of War, the companies who have accepted the right to develop power and who are now developing power, are doing so under revocable permits. Those permits, even as to the amount of water now taken by those companies, are such that if, in the opinion of the Secretary of War, it should be desirable to take away from either of those companies a part of the limited amount of water which they have, for the benefit of the Commonwealth—of the Nation—he might do so to give it to some other company which could make better use of it. That is the object of the provision of the Burton bill, which has made these permits revocable; and this act, as I understand it, has a tendency, if not positively, to make these permanent permits rather than revocable permits.

The CHAIRMAN. Since the passage of the Burton act, Mr. Scovell, we have had the general dam act, so called, which governs, or is supposed to govern all franchises that are issued, and those provisions would seem to limit the time.

Mr. SCOVELL. I see; limit the time for which the permits are to be given?

The CHAIRMAN. For which the franchise is given.

Mr. SCOVELL. And in your opinion would this act come under the dam act, so that even though these permits are revocable—

The CHAIRMAN. If it is so stated in this bill.

Mr. SCOVELL. In this bill?

The CHAIRMAN. That dam act was passed very late in the last session. The St. Lawrence bill was really held up, awaiting the passage of the general dam act, which goes exclusively to these questions. It was passed the very last of the session. I do not remember the day.

Mr. SCOVELL. I think, then, that your chairman has called attention, gentlemen, to a matter which might well be embodied in an amendment to this particular act which is under consideration to-day; and that is what we are here for, to consider the desirability of passing it in its present form or amending it, and therefore I have just come to make suggestions as to what you should consider in making amendments of this bill, in order to make it satisfactory, not only to the power companies themselves, but to the residents of western New York, such amendments as would recommend this bill by its terms

to the people of the United States and the other Members of Congress to consider and pass.

Mr. SCOVELL. Are there any further questions you wish to ask me?

Mr. LAWRENCE. I will ask you one question. Referring to the resolution passed by the New York Assembly, do you know how long they want us to defer action?

Mr. SCOVELL. I do not. I think the attorney general could take very prompt action on the matter. I had a conference with him yesterday in relation to it, and he simply wishes to satisfy himself that the rights of the State receive proper consideration, because the policy of the new governor is looking toward the conservation of the water-power rights of the State; and he is inclined to feel that the limited amount of water which can be taken in the State of New York for the generation of power under this treaty comes within the purview of his department as to where it should go and how it should be disposed of, and whether it should be to the utmost advantage or whether it should go where the other has already gone.

The CHAIRMAN. We are very glad to have heard you, Mr. Scovell.

Mr. SCOVELL. Thank you.

The CHAIRMAN. Mr. Howard, will you address the committee?

Mr. HOWARD. I think that Mr. Bowen, being the principal of the company, as I am merely called in as an engineer with him, should take precedence, with your permission.

The CHAIRMAN. When I asked him who else besides Mr. Randolph and himself were to be heard, your name was mentioned, and I assumed that you were not associated with him.

Mr. HOWARD. If you prefer it, I could make a brief statement, but I think the ground has been pretty fully covered. What is your desire, Mr. Bowen?

Mr. BOWEN. I think a brief statement would be very desirable at this time.

**STATEMENT OF MR. J. W. HOWARD, CONSULTING ENGINEER,
NO. 1 BROADWAY, NEW YORK.**

Mr. HOWARD. My name is J. W. Howard, consulting engineer, No. 1 Broadway, New York. My relation to the company that has called me in professionally is as consulting engineer. The name of the company is the Erie & Ontario Sanitary Canal Co. Without diverting from the subject, I think it wise to confine our attention definitely and precisely to the reason why we are here. The reason, in my humble opinion, why this company is here and why it has called me in, is this: This bill, in letter and words, would limit the granting of these additional 4,400 cubic feet of water to the companies in the words of the bill, "now actually producing power from the waters of the said river"—the Niagara River.

This company has made long and careful studies, and it is prepared to offer to the citizens of Buffalo and other cities in the State of New York not only remuneration, but other things which we are now, not under the letter of the law, but morally obliged to give to the people under the great waves of progress and reform that are going on in this country. The company would offer to return things the details of which are out of place here. They simply want the privilege of competing and having the right to bid for the use of these

4,400 cubic feet of water. Briefly, they would offer to the city of Buffalo a sanitary intersecting sewer or drainage canal which would save the city an expenditure of from four to six million dollars in connection with sewage and sanitation. The conditions in Buffalo, as you gentlemen know, are serious in regard to the water supply. In addition to that, it would cleanse a little creek called Buffalo Creek and Smokes Creek, making a harbor out of Buffalo Creek.

This canal would take all the sewage from Buffalo and the millions of gallons that are pumped from the new pumping works through the bathrooms and everything of that sort, of the city, and it would come back; so that it would be very valuable as a conserver of energy. It has a greater fall than the others and would provide more power than all the other companies now put together on the American side. There would be three power plants on the route of this canal. It would be connected with the Erie Canal, so that the boats coming through this barge canal here [indicating on map] divert into this canal and come into Buffalo at the harbor to be placed here [indicating]. I have investigated in Paris a little, and under the Bastille is a canal. Of course, the Bastille has been removed and there is a big tower there. Boats pass through there to the Seine River. Barges about 20 feet deep would pass up to Lockport in the new canal and into Lake Erie on the level. There would be an impounding basin there. The Government is expending several million dollars in the harbor below, and this would supplement it and would stop the Government from spending much more money there. There are other details that will be placed before the Secretary of War, for I am sure the spirit of the committee is now to so amend this bill that instead of reading, as at present, with the words, "That the Secretary of War is hereby authorized to grant permits for the diversion, within the State of New York, of the waters of Niagara River, above the Falls of Niagara, for the creation of power to individuals, companies, or corporations which are *now actually producing power* from the waters of the said river or its tributaries in the State of New York," that this committee is now willing and glad, this matter having been called to their attention, to change it, and to put in whatever words may be deemed best for the best interests of Buffalo and any other cities of New York State and Pennsylvania, too. The words that I would suggest—you can probably get better words—would be these. I would suggest that the bill read, when modified, as follows: "That the Secretary of War is hereby authorized to grant permits for the diversion, within the State of New York, of the waters of Niagara River, above the Falls of Niagara, for the creation of power"—now, this is the change—"to any person or company which the Secretary of War may decide to be to the best interests of the United States, the State of New York, and Buffalo and adjacent cities in the United States."

This is a matter of direct competition. The company I represent comes in direct competition with Gen. Greene's company. He comes from Canada without duty. We can not bring coal, power, and heat from Canada without duty. God has placed up in Canada plenty of coal right across an artificial political border. We can not get the duty removed from the coal. That duty should be removed, so that that coal could be obtained by the people up in the cold New England

climate, and not make us buy from the coal barons in Pennsylvania. It is not righteous. I am happy to say that I am one of the members of the executive committee of our reform league, and we are hoping to clean our house and to make conditions better and the people happier. I am here with these gentlemen professionally. I ask you to act upon this bill fairly and openly, as I can see in your faces you will; and after the bill has been considered in that way it will go before the Secretary of War on the merits of the question, and he being a gentleman, both as a man and as an official, would then and there decide on the question by and with the advice of the many counselors he has at his disposal. Of course there would be Army officers, who are always open and frank. When I asked Gen. Greene as to whether this should be open to competition, he honorably said yes. As we may have our discussion before the Secretary of War, it is not necessary to speak further here.

Mr. MADDEN. Is it your idea that this canal would be constructed by the company that you speak for, and the use of it given to the people of Buffalo free of cost?

Mr. HOWARD. Absolutely free of cost, in every sense.

I thank you very much. I am sorry to have been so assertive, but I wanted to be brief. I would like to introduce the engineer, who will present the matter in detail—Mr. Randolph, of Chicago.

STATEMENT OF MR. ISHAM RANDOLPH, REPRESENTING THE ERIE & ONTARIO SANITARY CANAL CO.

The CHAIRMAN. Please give your name and residence to the stenographer.

Mr. RANDOLPH. My name is Isham Randolph, of Chicago. I do not know that it is necessary for me to take up your time in discussing this matter—

The CHAIRMAN. You are representing whom?

Mr. RANDOLPH. I am representing the Erie & Ontario Sanitary Canal Co. This company was organized some two years ago. I was called in to advise as to the engineering practicability of the project. I have gone into it thoroughly.

Mr. MADDEN. Allow me to ask a question right here. You were chief engineer of the sanitary district of Chicago that constructed the great sanitary canal there?

Mr. RANDOLPH. I was chief engineer for 14 years and 2 months.

Mr. MADDEN. And you were one of the consulting engineers appointed by the President of the United States to determine on the character of the canal to be constructed across the Isthmus of Panama?

Mr. RANDOLPH. I was one of the minority of five who decided that type.

Mr. MADDEN. I wanted that to go in the record.

Mr. RANDOLPH. I have gone into the subject until I know, as an engineering proposition, that it is practical. I know it will afford an outlet for this sewage. I know that the removal of the sewage of Buffalo from the Niagara River will be an infinite benefit to the whole Niagara frontier. These things our company offers to the city of Buffalo and to the Niagara frontier free of cost. We are not here simply as public benefactors. The people back of me are not

willing to give their money to Buffalo and to the State of New York without any return. They are willing to give these things, but they ask in return that they be permitted to take this small amount of water and to convert that into power which will yield them a revenue upon their investment.

Mr. CASSIDY. Right there—a suggestion was made a little earlier that the 4,400 feet might be used for this purpose plus another amount which might be used for sanitary purposes. What is that other amount?

Mr. RANDOLPH. We would like to get, if we can, 6,000 cubic feet per second.

Mr. CASSIDY. All told?

Mr. RANDOLPH. All told.

Mr. MADDEN. Would it be your plan to turn this sewage into the Niagara River?

Mr. RANDOLPH. No, sir; it would be our plan to take it out of the Niagara River. We reverse Smokes Creek; we reverse the Buffalo River, just as in Chicago we reversed the Chicago River, and we propose to have Buffalo reverse its sewage so that it will discharge into this canal which we build. We are doing for the city of Buffalo free of cost to the city of Buffalo what the city of Chicago has done for itself at an expenditure of some sixty-odd million dollars.

Mr. LAWRENCE. How do you hope to get those extra 1,600 feet from the present company? Are they not acting under an irrevocable permit?

Mr. RANDOLPH. This is the language of the treaty:

The prohibitions of this article shall not apply to the diversion of water for sanitary or domestic purposes, or for the service of canals for the purposes of navigation.

We hope to get it under that clause.

Mr. LAWRENCE. You hope to get it for sanitary purposes?

Mr. RANDOLPH. Yes, sir. Now, gentlemen, I am prepared to answer any questions I can answer.

Mr. CASSIDY. That goes into Eighteenmile Creek there?

Mr. RANDOLPH. Yes, sir.

Mr. CASSIDY. Where does it discharge into Lake Ontario with reference to the mouth of the Niagara?

Mr. RANDOLPH. That discharges some 18 or 20 miles away from Youngstown, I think it is. As a result, the towns along the Niagara River have to discharge their water into the Niagara River. We know that the city of Niagara has to use artificial means of purifying its water. Mr. Taft told me when we were going to Panama together that the waters of the Niagara River were so polluted that the troops stationed at Fort Niagara could not use the water. Other means of supplying the troops with water had to be supplied, because the water was polluted, and could not be used.

Mr. EDWARDS. On account of the sewage of Buffalo?

Mr. RANDOLPH. Yes.

Mr. MADDEN. Has the company you refer to been organized?

Mr. RANDOLPH. Yes; it was organized two years ago.

Mr. MADDEN. Has it any money paid in on its capital?

Mr. RANDOLPH. Only promotion money.

Mr. MADDEN. The men who are interested in the company are responsible men, are they?

Mr. RANDOLPH. Yes, sir.

Mr. MADDEN. And they are qualified to carry out the plan which you are outlining?

Mr. RANDOLPH. Yes, sir.

Mr. CASSIDY. What is the total drop?

Mr. RANDOLPH. The total drop is 327 feet. Of that we propose to utilize 312 feet. To give you a slight idea of the comparative use of the water for these different plants, I will say this: We are told that the Niagara Power Co. has a drop of 136 feet. The theoretical result of that drop for each cubic foot of water will be 15.4 horsepower. The Schoellkopf Co. has a drop of 210 feet, I believe. Their theoretical result will be 23.8 horsepower. We have a drop of 312 feet, and our theoretical result is 35.4 horsepower.¹

Mr. HOWARD. Per cubic foot of water?

Mr. RANDOLPH. Per cubic foot of water.

Mr. MADDEN. How would it work out in horsepower?

Mr. RANDOLPH. I would count on 80 per cent efficiency. We ought to get 80 per cent out of that.

Mr. MADDEN. That would be about 28 horsepower per foot?

Mr. RANDOLPH. Yes, sir.

The CHAIRMAN. Is there anything further, Mr. Randolph?

Mr. RANDOLPH. Not unless you have some questions to ask. I think the matter has been placed fully before you, and I do not care to take up your time.

Mr. MADDEN. How much would it cost the city of Buffalo to make its disposition of the sewage if it developed the system of intersecting sewers which this company that you speak for proposes to give to it free?

Mr. RANDOLPH. You mean for them to put the project through?

Mr. MADDEN. If the city of Buffalo should undertake to make the disposition of the sewage which you undertake to make for it, how much would it cost the city?

Mr. RANDOLPH. I should say it would cost the city \$25,000,000.

Mr. MADDEN. Are there any other cities to be benefited?

Mr. RANDOLPH. Tonawanda and the other small towns along the Niagara frontier.

Mr. MADDEN. How much do you estimate would be saved to the taxpayers of these communities by the operation of the intersecting sewage system to be put in by the company you speak for?

Mr. RANDOLPH. Do you mean if they had to do the same thing themselves?

Mr. MADDEN. That is what I mean.

Mr. RANDOLPH. It will save them over \$30,000,000.

Mr. EDWARDS. How much will your project cost?

Mr. RANDOLPH. About \$25,000,000. If there are no further questions, I have nothing further to offer. I thank you for your attention.

The CHAIRMAN. Mr. Bowen, we are ready to hear you.

¹ Power schedule: One cubic foot of water falling 136 feet produces 15.4 gross horsepower; one cubic foot of water falling 210 feet produces 23.86 gross horsepower; one cubic foot of water falling 312 feet produces 35.45 gross horsepower.

Four thousand four hundred cubic feet of water per second will produce the horsepower scheduled below for the respective heads shown:

Three hundred and twelve feet head, 155,980 gross, 124,784 net, 100 per cent; 210 feet head, 104,984 gross, 83,987 net, 67.3 per cent; 136 feet head, 67,760 gross, 54,208 net, 43.4 per cent.

The net power is figured on 80 per cent efficiency.

STATEMENT OF MR. MILLARD F. BOWEN, OF BUFFALO, N. Y.

Mr. BOWEN. Mr. Chairman and members of the committee, there is one point that has not been emphasized, I think. That is, that the Government of the United States is pledged to stop this pollution of all international waters. Reading the treaty, under Article IV, one of the provisions is:

It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side, to the injury of health or property on the other.

By reason of our stopping the pollution of the east end of Lake Erie and of the Niagara River we will be carrying out this pledge made by the treaty that has been made by the United States Government to the Canadian Government. I realize that all of the questions involved, after this bill is amended, will come up before the Secretary of War. I am here to answer any questions you gentlemen may put.

Mr. MADDEN. I would like to ask you this question: Suppose that by any chance the company you represent should be authorized to take the water which is yet unappropriated, 4,400 cubic feet per second, and you should begin the construction of the work for the generation of electrical energy intended to be generated by the investment that you propose to make, is there any possibility of your concern combining with any of the other concerns?

Mr. BOWEN. I am glad that you brought up that subject.

Mr. MADDEN (continuing). Any of the other concerns which are interested in the matters involved in this discussion?

Mr. BOWEN. I am glad you brought up that subject. I have prepared a report, which I will ask to be included in the minutes of this hearing, and in it we make this pledge: "That we are not in any way connected with any of the interests that are connected with any of the trusts or power companies;" and, furthermore, in the statement of what we ask for, what we ask for is made subject to this provision: "That the grant shall cease to be operative should it be judicially determined that said company has entered any conspiracy or unlawful combination or monopoly in restraint of trade."

The company is absolutely independent and new; and if I were permitted a few very brief words in regard to the inception of it, it would be in these words: The subject was brought to my attention through a suggestion of a citizen of Buffalo that the Buffalo River could be turned backwards as the Chicago River had been turned backwards. I took that suggestion as a starter for the promotion of this enterprise and made a study of it. I called in the best engineers and the best experts possible to be secured in connection with it, and the present condition is the result of thoroughly independent work on our part, and work that has been thoroughly gone through in all of its details; and we know that, not only from the commercial standpoint, but from the engineering standpoint, we have covered every subject. We claim a great deal. We know that we can get 96 per cent of the energy of the water, whereas without any disparagement of the pioneers in this development of power on the Niagara frontier, the engineers who have constructed the Niagara Falls Power Co.'s plant have so constructed it that with the development of the greatest efficiency they can develop their 8,600 cubic feet is at the rate of

41.5 per cent of the energy that is possible to be secured for the same volume of water, counting the total of 100 per cent. I have prepared here a chart that shows what this 4,400 feet will produce by reason of its development by the different companies. Taking the total head of 327 feet between the two lakes, the total amount that could possibly be developed, 100 per cent is 126,880 horsepower. By the Erie & Ontario Sanitary Canal Co. we can develop 122,000 horsepower, whereas the Niagara Falls Power Co., according to the statement of efficiency made by Gen. Bixby recently, with the same head, can produce only 42,000 horsepower. That ratio being established in the report of Gen. Bixby shows 82,000 horsepower is the fullest efficiency the Niagara Falls Power Co. can get out of 8,600 cubic feet per second. The Schoellkopf Co., so called, by reason of their development, using 210 feet estimated, gets 92,400 horsepower; the Niagara Falls Power Co. gets 42,000 horsepower, and our company 122,000 horsepower out of this 4,400 cubic feet alone. Out of the 6,000 feet that we ask for we would be getting 160,000 horsepower; and therefore, on the score of sanitation and the conservation of natural energy, we claim that we are entitled to the use of the water.

Mr. YOUNG. Is your scheme protected by patent?

Mr. BOWEN. I wish it were; but it is open to every engineer.

The CHAIRMAN. Mr. Bowen, under what provision in the law or treaty do you expect to get 1,600 feet for sanitation purposes?

Mr. BOWEN. There are two provisions of the treaty that relate to that subject.

The CHAIRMAN. Will you read them?

Mr. BOWEN. Yes. The provision of the treaty that relates to that subject is that such provisions of limitation of the amount are not provisions intended to interfere with the ordinary use of such waters for domestic and sanitary purposes. But a stronger provision is that—

Gen. GREENE. What article is that?

Mr. BOWEN. That is at the end of Article III. The stronger provision is at the end of Article V, which says:

The prohibitions of this article shall not apply to the diversion of water for sanitary or domestic purposes, or for the service of canals for the purposes of navigation.

The CHAIRMAN. That is what you rely upon?

Mr. BOWEN. That is what we rely upon for the 1,600 cubic feet.

The CHAIRMAN. Why are you not allowed now to make application under that for sanitation purposes?

Mr. BOWEN. My dear sir, every gentleman present knows that the whole country would be aroused by the gentleman who spoke this morning against any such further diversion, and we do not wish to be forced to a position of relying upon that provision for the full amount of water that we want. We could not get it if the country were aroused again as it was at the time of the inception of the Burton bill.

The CHAIRMAN. You have a feature in here that is rather new to me, Mr. Bowen. I refer to the turing of that river. How much water are you going to get there? You turn the Buffalo River, which has been as bad for Buffalo as the Tiber used to be for old Rome. Can you use all that water, that flood of water?

Mr. BOWEN. I think the War Department would interpret that as being part of the 6,000 cubic feet now flowing into Lake Erie.

The CHAIRMAN. Have you heard any suggestion of that kind?

Mr. BOWEN. I think that is the reasonable construction of it, that that would be part of our 6,000 cubic feet, because it now is part of Lake Erie, practically, and we are asking for 6,000 cubic feet.

Mr. MADDEN. If you should go on with your work, you would create a condition which would make the flow—

Mr. BOWEN. We would turn it back and not allow it to come into Lake Erie. Therefore we would be charged with that amount.

Mr. LAWRENCE. Has your company been organized?

Mr. BOWEN. Yes, sir; it was organized two years ago.

The CHAIRMAN. Have you had any suggestion of that kind from any engineer of the United States?

Mr. BOWEN. No, sir; not direct. But I know, if you are forbidden to take water from a river at a certain point, and you take it from the tributaries which, coming together, make that river, from a moral standpoint and from an engineering standpoint you are taking it from the river. I advised these gentlemen that if they took the water from the Buffalo Creek—this little thing down here [indicating on chart]—that they were taking that amount of water from Lake Erie, which, if you did not take it away, would flow to the Niagara. Now, do not mix Buffalo Creek with Niagara River. It is a picayune little creek coming in here [indicating]; but if we turn back those little creeks, we take that amount of water from the lake which is above the inlet of the Niagara River, and therefore, morally and practically, we are taking it from the Niagara River and its tributaries. We can not do that.

The CHAIRMAN. Mr. Howard nodded to me, and I took it that he had been to see the United States engineers.

Mr. HOWARD. It was not my intention. I was bowing in acquiescence with the fact that if you did take it from the small creeks flowing into the Niagara River you took it from the Niagara River. I never infer anything. I am very blunt.

The CHAIRMAN. Proceed, Mr. Bowen. I beg your pardon for interrupting.

Mr. YOUNG. Under the laws of what State did you say you were organized?

Mr. BOWEN. Under the business corporation law of the State of New York.

Mr. YOUNG. That is a general law?

Mr. BOWEN. A general business corporation law, that allows the right of eminent domain for companies organized as under our charter. You will find on page 3 of this pamphlet a copy of the purposes of the corporation. It reads:

Its purposes, as expressed in its charter, are "to accumulate, store, conduct, furnish, and supply the cities of Buffalo and Lockport and contiguous cities, towns, and villages, with water for drainage, manufacturing, hydraulic, hydroelectric, and municipal purposes, not under the transportation corporation law, and to collect payments and rentals for the same and the products thereof," etc.

Mr. YOUNG. Has part of the capital been paid in?

Mr. BOWEN. Only for promotional purposes. We do not offer any bonds until we get the right to use the water. The foundation of our company is the right to use this water. Therefore it is not fair to ask for any money except for promotional expenses.

Mr. YOUNG. Have you any fixed capital?

Mr. BOWEN. Only \$100,000, for promotional expenses.

Mr. EDWARDS. Do you mean to convey the idea that that is the amount paid in, or is that the authorization?

Mr. BOWEN. That is the authorization. It is being paid in as fast as we require the money for promotional expenses.

Mr. LAWRENCE. How much capital do you figure it will require to finance such a scheme as you outline?

Mr. BOWEN. \$30,000,000. Mr. Randolph puts it at \$25,000,000, but we put on another \$5,000,000 to carry the charges in there until we get the water, and are actually utilizing the power.

Mr. HOWARD. May I venture upon your patience to say that I had advised that there should be no discussion of engineering and technical details here, but inasmuch as they have been brought in, I will present as one of the exhibits for my client this paper, giving you the statistics.

The CHAIRMAN. Yes.

Mr. HOWARD. And I ask that it be inserted in the record.

The CHAIRMAN. In connection with whose remarks would you like to have that go in?

Mr. HOWARD. In connection with Mr. Bowen's remarks. He has read from it.

Mr. BOWEN. May I suggest that as the most graphic part of the article is the graphic presentation by chart that we be permitted to make such cuts as may be necessary, or shall we depend upon your usual methods to have those charts included in the report?

The CHAIRMAN. Mr. Fletcher, the clerk of the committee, will get in correspondence with you. You and he can talk about it after the meeting is over. There are, possibly, some pictures also to go in with Gen. Greene's remarks, and the two could be combined, perhaps.

Mr. BOWEN. Surely.

(The paper above referred to is printed at the end of Mr. Bowen's statement.)

Mr. BOWEN. The only additional remark I want to make at this time is in the shape of a short summary. We are charged with being visionary, because we promise too much.

The CHAIRMAN. I do not think you need to bother about it. Mr. Bowen—not at all.

Mr. LAWRENCE. The fact that you propose to raise \$30,000,000 helps you out a little bit. [Laughter.] That is not visionary.

Mr. BOWEN. This is a succinct summary of what we say are the reasons why we should be granted this water.

Mr. MADDEN. The whole thing is going into the record, is it not?

Mr. BOWEN. Yes; but just to remind you of the points, I will say this. The summary is:

First. Because we give compensation worth many millions to the public in the shape of flood abatement and sewage disposal.

There has no mention been made here of flood abatement. All Buffalonians know that every year we have serious floods there, and this canal would intercept and turn back all the waters of these streams.

Second. Because we purify the east end of Lake Erie and Niagara River.

Third. Because we bring the Barge Canal into Buffalo and Lackawanna and furnish terminals to the State.

Fourth. Because we carry out the doctrine of conservation of natural resources.

Fifth. Because, by reason of having pure water, the typhoid rate will be reduced over 50 per cent, as has been proved in Chicago.

I thank you for your attention.

The CHAIRMAN. There is one more gentleman we want to hear from—Col. Alberger.

Mr. EDWARDS. I would like to ask Mr. Bowen one question: Your company would be subject to the general-utilities act—the public-service act?

Mr. BOWEN. We would be perfectly willing to submit to all constituted bodies. We would have nothing to conceal. We are absolutely open to investigation by all constituted bodies.

Mr. YOUNG. How much water power did you state you expected to develop? How much horsepower?

Mr. BOWEN. One hundred and sixty thousand horsepower from this 6,000 cubic feet. That is 96 per cent of the total energy of the water.

Mr. MADDEN. I figured on a basis of 80.

Mr. HOWARD. Let the engineer state it.

Mr. RANDOLPH. You claim that you get 96 per cent result from the total. You get more of the 100 per cent than any of the others because of the great head, but you do not get over from 80 to 85 per cent.

Mr. BOWEN. That was not my point. I was making this point: We use 96 per cent of the head.

Mr. RANDOLPH. Oh, that is all right.

[Memorandum submitted by Mr. Isham Randolph.]

THE ECONOMIC RIGHTEOUSNESS OF THIS IS MANIFEST.

The fact that the waters of the Niagara River are polluted by the sewage of Buffalo and rendered unsuitable for drinking is a menace to the inhabitants of the Niagara frontier.

That this is true is beyond dispute, and the people who suffer from the contamination of their water supply are calling loudly for relief.

The United States Government itself is suffering from the contamination of these waters, for it has been found that the natural source from which drinking water for Fort Niagara should be secured is fatally unhealthful.

The remedy for this condition must be found in preventing the sewage of Buffalo from entering the Niagara River.

This can be accomplished by the creation of certain artificial channels into which the effluents from all the sewers can be discharged.

The geographical location of the city and its local topography make it possible to prevent its sewage entering the Niagara River.

To do this the direction of flow in Buffalo River and Smokes Creek must be reversed, and the portion of the Erie Canal between Black Rock and Tonawanda must be used.

The cost of this work will be very great, running into many millions of dollars, an expense which the city of Buffalo does not feel called upon to incur.

The only incentive to any other agency for undertaking this work is a commercial one, and that incentive is sufficient to induce capital to invest in the necessary work, provided it may reap the revenue derivable for the water powers which will naturally be available when the work is done.

The mean elevations shown on the United States topographical maps for Lakes Erie and Ontario are respectively 573 and 246, hence the total difference in level between the two lakes is 327 feet.

It is proposed to so locate and construct the channel which is under discussion as to make this entire head, less a small loss in necessary slope, available

for the development of power. This means that there will be an absolute conservation of the entire natural energy of the water. The economic righteousness of this is manifest.

To make this project possible the United States Government must grant a permit to take water from Lake Erie.

The volume desired by the projectors is 6,000 cubic feet per second. If this volume is given, the projectors will create all the necessary channels and give the city of Buffalo and the whole Niagara frontier the perpetual right to drain their sewage into the artificial channels which they have created, and when that is done relief is at once afforded to the people who live along the Niagara River and are dependent upon that stream for their drinking water.

This is the proposition stated concisely.

CHARTER.

The Erie & Ontario Sanitary Canal Co. has been organized, under the laws of the State of New York, to construct, without State or Federal aid, a canal between Lake Erie and Lake Ontario.

Its purposes, as expressed in its charter, are "to accumulate, store, conduct, furnish, and supply the cities of Buffalo and Lockport and contiguous cities, towns, and villages with water for drainage, manufacturing, hydraulic, hydro-electric, and municipal purposes, not under the transportation corporation law, and to collect payment and rentals for the same and the products thereof; to construct a canal from Lake Erie to Lake Ontario and laterals thereto, and to use the docks along such canal for factories, shipping, terminals, and warehouse purposes; to carry on manufacturing, contracting, building, and mercantile business in connection therewith; and to transact such other business as shall be naturally incident thereto."

Provisions.—It is provided that said canal shall be used free of cost by the cities of Lackawanna, Buffalo, Tonawanda, North Tonawanda, Niagara Falls, Lockport, and all other municipalities and communities situate upon the Niagara frontier, to carry off all the sewage and the sewage-polluted storm waters now flowing from said towns, cities, and municipalities into Lake Erie and the Niagara River, polluting the waters thereof, to the great injury to the health of the persons living along the said Niagara River.

The said canal will be of sufficient depth and width to enable boats, barges, and other water craft of large tonnage to navigate the same from its beginning on Lake Erie to a point intercepting the Barge Canal at or near Pendleton, in the State of New York, thereby increasing the efficiency and the value to the public of said Barge Canal.

The level of Lake Erie will not be lowered by the building of said canal, so as to interfere with or affect its navigability, and the waters flowing within the Niagara River, now under the control of the War Department, will not be diverted so as to affect the beauty and grandeur of the volume thereof flowing over Niagara Falls.

WHAT WE ASK FOR.

The Erie & Ontario Sanitary Canal Co. asks that it be authorized to take 6,000 cubic feet of water per second from Lake Erie for sanitary purposes, power, and canal navigation; which volume of water shall be taken through three channels designated as Buffalo River, Smokes Creek, and Black Rock Harbor; 4,400 cubic feet of this amount being the balance of the 20,000 cubic feet allowed under the Canadian waterways treaty and 1,600 cubic feet under the sanitary clause of the same treaty.

The company within two years after the permit is granted shall begin the construction of the canal, without seeking from State or Nation other aid than that afforded by such cooperation as may properly be effected between Federal and State authorities, and thereafter shall with due diligence prosecute the work to completion.

In consideration of the grant of water, the company shall give to the cities of Lackawanna, Buffalo, Tonawanda, North Tonawanda, Niagara Falls, Lockport, and all other municipalities, public and private corporations and individuals situate or living in what is known as the Niagara frontier, the free use and perpetual right to use the said canal for sewage-disposal purposes and for the carrying off of storm waters.

In consideration of the facilities which it will afford to the communities, municipalities, corporations, and individuals, the company shall have and forever enjoy the right to and possession of all the water power which it is possible

to develop from the volume of water which it withdraws from Lake Erie and causes to flow through its proposed channels into Lake Ontario.

The company shall have the right when Buffalo River shall have been sufficiently deepened and enlarged to a junction with the proposed canal to make a proper connection of said river with said canal, and thereafter cause the waters of Lake Erie to flow through said Buffalo River into the said canal. And said company may make such changes and improvements in Smokes Creek, Ellicott Creek, and other streams in Erie and Niagara Counties as will permit water to enter the said streams from Lake Erie, and through them into the canal of said company, and through the same into Lake Ontario. And said company may build and maintain at the mouths of Smokes Creek and Eighteen-mile Creek such protecting piers and docks as may be necessary to carry out the purposes and operations of the company. All of such construction affecting navigation shall be done under the direction of the War Department.

The grant shall cease to be operative should it be judicially determined that said company has entered any conspiracy or unlawful combination or monopoly in restraint of trade.

FURTHER DESCRIPTION.

The canal starts at the mouth of Smokes Creek in the city of Lackawanna, and passes around the city of Buffalo northward parallel with the east city line, crossing the various streams that cause the floods in South Buffalo and turning them backwards; continuing northerly through a tunnel 6 miles long, and crossing under the State Barge Canal near Pendleton, where a lock makes the connection between the two canals; thence generally parallel with the Barge Canal to Lockport, where it passes over the escarpment and into Eighteenmile Creek, which stream it follows to Lake Ontario. One dam will be built at Newfane and one at Burt, and there will be three power houses, using a total head of 312 feet.

The accompanying small map shows the general location of the canal with its branches and their relative position to the cities of the Niagara frontier, the streams they cross, and the terminals of the canal.

BARGE TERMINALS.

The terminal of the new Barge Canal is at Tonawanda, and the Government is spending much money building a ship canal around the currents of the Niagara River; the Sanitary Canal coming to the present Buffalo Harbor will give the Barge Canal two terminals, and maintain the value of Buffalo property now and for many years used for canal purposes, thus supplementing the Government and State work. The terminal at Tonawanda will also be benefited by the deepening of Ellicott Creek, making a ship canal of it.

POLLUTION OF NIAGARA RIVER.

At present the Niagara frontier drains and sewers into Niagara River; therefore the cities bordering upon Niagara River and situate in the district contiguous thereto are subjected to epidemics of typhoid fever caused by the polluted water taken from Niagara River, and considerations of public health demand the abatement of these dangers without delay.

The War Department has found it necessary to drive wells and distill water for drinking at Fort Niagara because of the polluted condition of the river: in Chicago it has been proven that by turning their sewage backward 51 per cent of typhoid is eliminated.

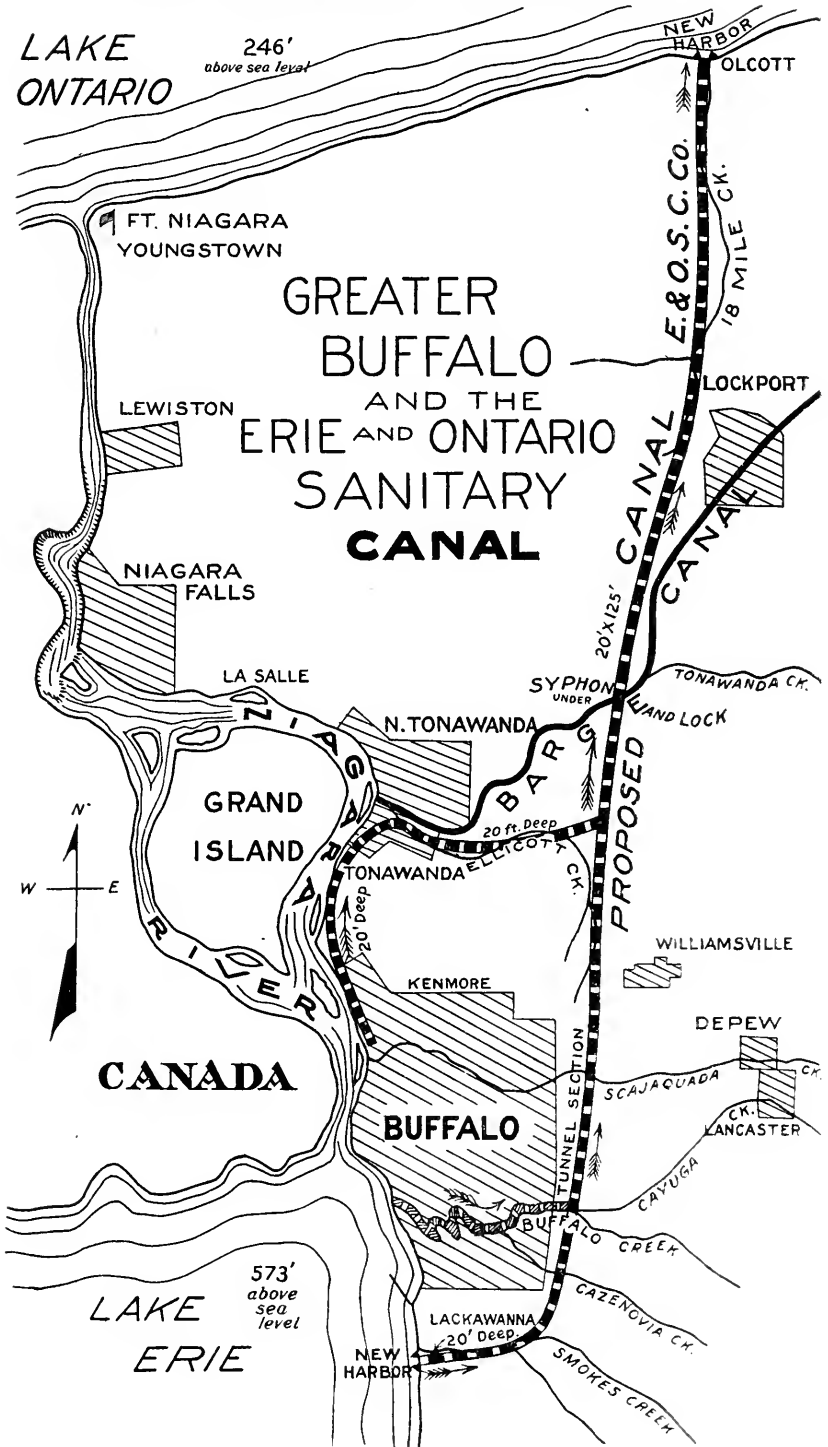
CANADIAN TREATY.

It is stipulated in Article V of the treaty signed and ratified recently that the United States may authorize and permit the diversion within the State of New York of the waters of Niagara River above the Falls for power purposes, not exceeding, in the aggregate, a daily diversion at the rate of 20,000 cubic feet per second, provided the level of Lake Erie and the flow of the Niagara River shall not be appreciably lowered.

The prohibition of Article V does not apply to the diversion of water for sanitary and domestic purposes and for the service of canals for the purpose of navigation.

It is stipulated in Article IV of said treaty that the boundary waters shall not be polluted on either side to the injury of health or property on the other.

"THE NATURAL SOLUTION"



LESS THAN 3 PER CENT OF RIVER WATER ASKED FOR.

There flows through the Niagara River 222,000 cubic feet of water per second, and this company asks for but 6,000 cubic feet, or less than 3 per cent of the total amount.

It is said that the present 8,600 cubic feet per second taken by the Niagara Falls Power Co. lowers the water at the crest three-tenths of 1 inch; at the same rate the water we ask for would lower it but two-tenths of an inch.

PURIFICATION.

To the water available for power will be added the water available for sanitation, making the ratio of dilution much greater than at Chicago, and the purification much more rapid.

This canal will serve the public as a sanitary canal perpetually. The dilution and purification will be such that there will be no danger to the health of people on Lake Ontario.

BARGE CANAL CROSSING.

Near Pendleton the Sanitary Canal will cross the State Barge Canal by passing under that canal by means of a syphon; at this point the level of the Sanitary Canal is lower than the Barge Canal; barges will pass from one to the other by means of a lock.

SOUTH BUFFALO FLOOD ABATEMENT.

South Buffalo has yearly suffered by flood with consequent great damage; the water of Cazenovia, Cayuga, and Buffalo Creeks rushing down the tortuous channels comes against the lake water in Buffalo River, which acts as a dam, retarding it, and causing serious floods.

The Sanitary Canal crosses all these streams and will divert the water; by a system of gates and regulating works the surplus flow can be sent in either direction, and carried off to enlarged sections of the canal and impounded or flow on through its straight channel over the weirs to Lake Ontario.

BUFFALO SEWAGE DISPOSAL.

At present the Buffalo sewers in the southern section empty into the Buffalo River; a trunk sewer crossing the business section of the water front takes care of the central portion, and in the northern section the flow is direct into the Niagara River.

Under the offer of this company Buffalo River will flow inward, carrying the sewage now emptying into the lake back to the Sanitary Canal.

By extending the trunk sewer 9,000 feet the sewers of the central section of the city will be emptied into the river branch of the Sanitary Canal. The sewers in the upper part of the city now emptying into Niagara River will be emptied into the same branch of the Sanitary Canal.

Into the same section of the canal the sewers of the Tonawandas will be emptied. An idea of this can be gathered from the accompanying map.

FACTORY SITES.

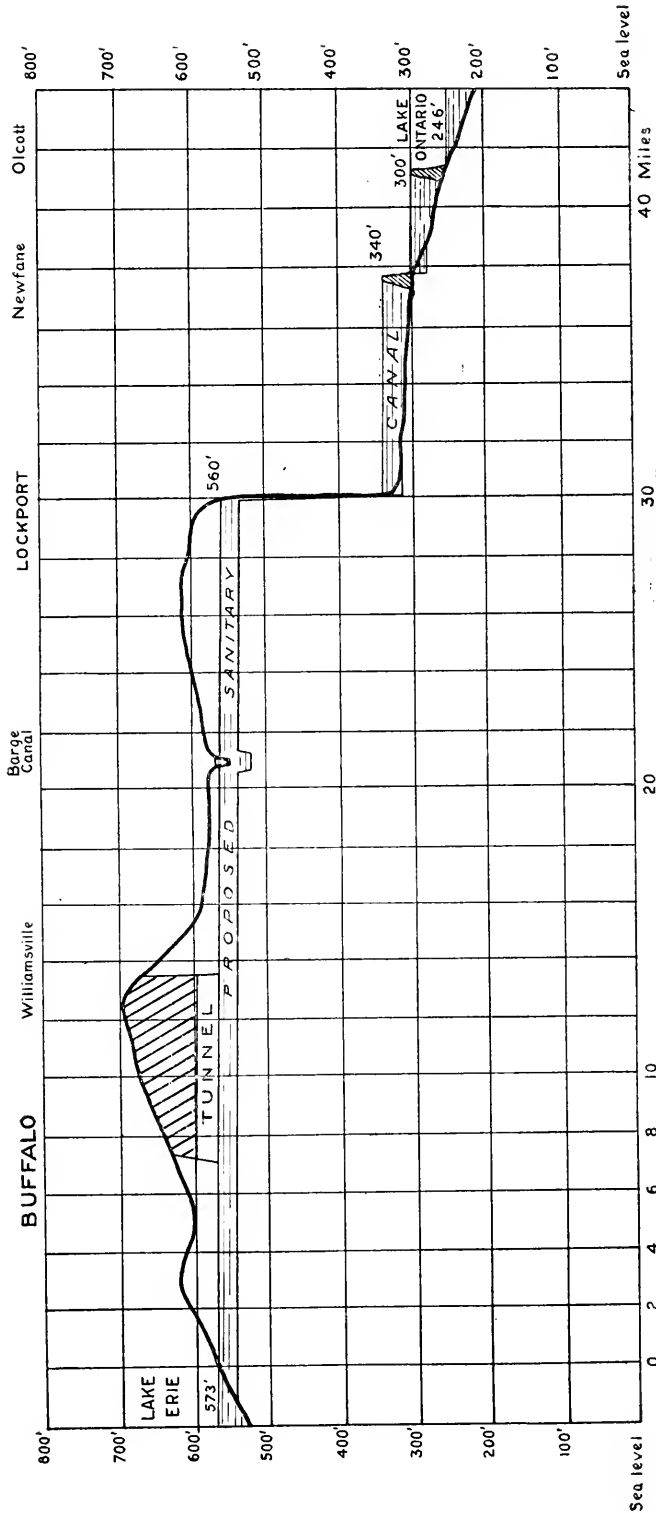
The company will acquire property for factory sites, and will provide to manufacturing industries located along the right of way power as well as rail and water transportation.

Docks and storage yards for bulky freight will help materially to develop industrial life.

The company will have its own junction railway or industrial line so as to provide sidings, etc.

CONSERVATION PROFILE.

The accompanying profile shows the method of utilizing almost the entire head between the lakes; between Buffalo and Lockport the loss of head to furnish flow is 13 feet; at Lockport advantage is taken of a drop of 220 feet; the rapid fall between that point and Lake Ontario amounts in all to 94 feet; this is conserved by backing up the water at Newfaun giving 40 feet head over a dam, and again at Burt where 54 feet head will be gained; thus the three falls will make a total head of 312 feet utilized out of a possible 327 feet.



PROFILE ILLUSTRATING CONSERVATION OF HEAD.

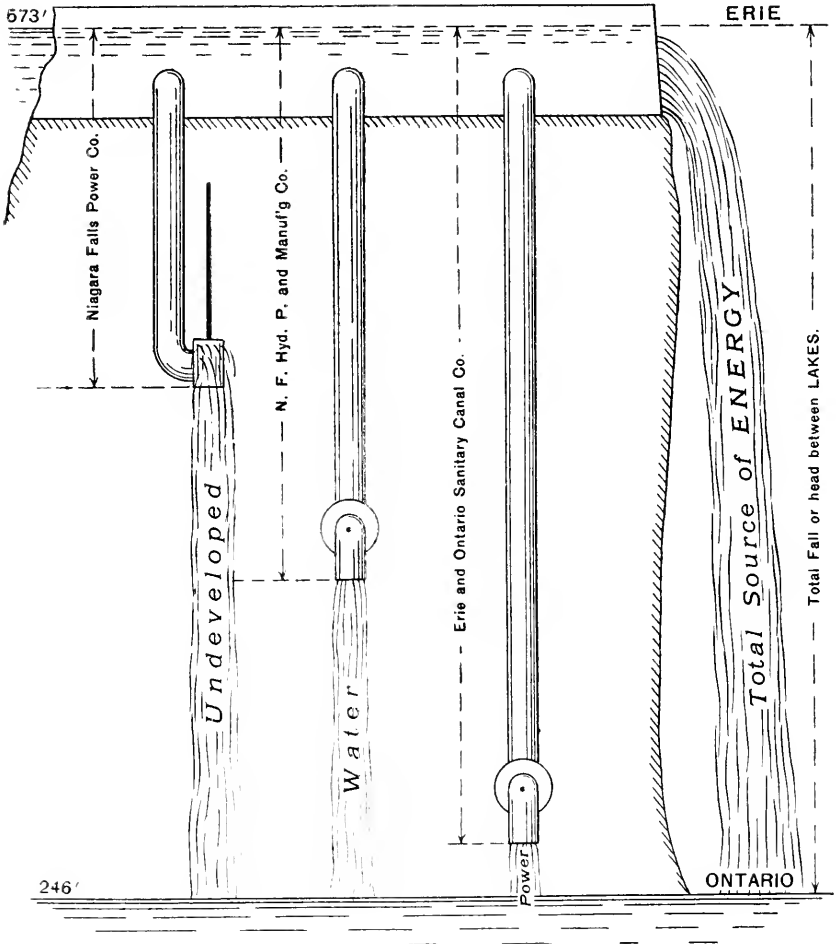
COMPANIES AT THE FALLS COMPARED.

The following diagram graphically shows the head efficiency of the several developments at Niagara Falls on the American side compared with that of the Sanitary Canal.

The Sanitary Canal will use 312 feet of the total 327 feet, or 96 per cent.

The Niagara Falls Power Co. uses 136 feet, or 41.5 per cent.

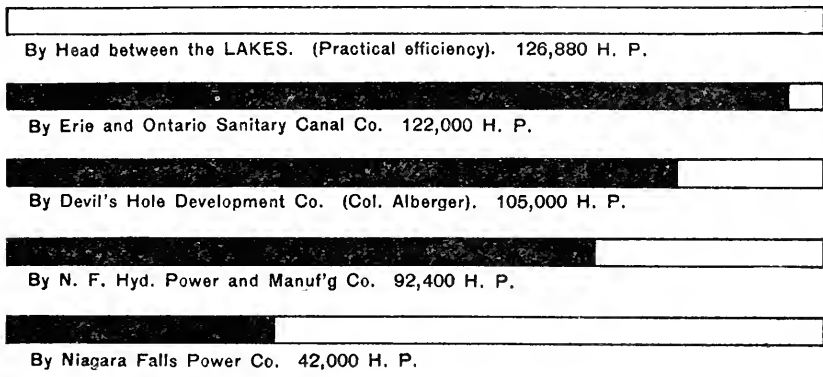
The Schoellkopf Co. uses 210 feet, or 64.2 per cent.



GRAPHIC COMPARISON OF USE AND WASTE OF HEAD.

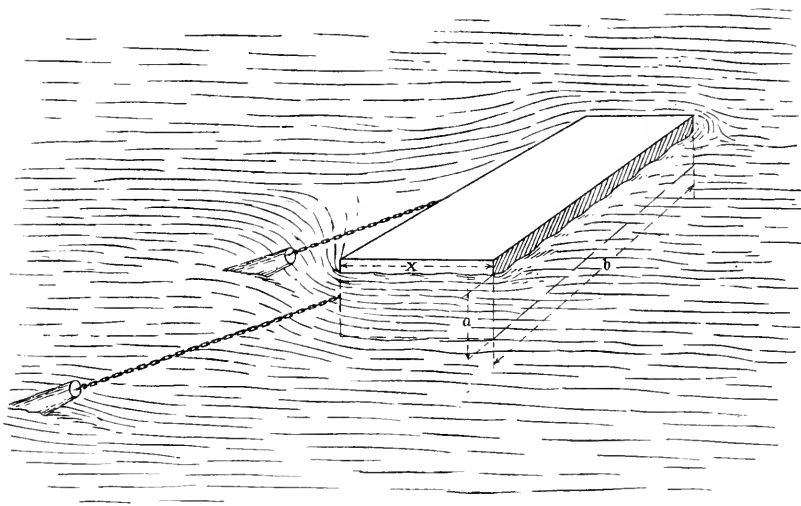
POWER DEVELOPED.

The graphic table below shows the comparative amount of power possible to be developed from the use of the 4,400 cubic feet of water still available for power purposes under the treaty.



LAKE LEVELS.

Lake levels can be maintained by suitable means for retarding the flow of 6,000 cubic feet per second, so that the water flowing down Niagara River will be baffled to the extent necessary. The retarding dam shown is a floating dam and will rise and fall with the regular rising and falling of the river, but removable in winter when ice is flowing.



FLOATING DAM IN A CURRENT OF 5 FEET A SECOND.

V=Current velocity.

K=Coefficient.

Q=Cubic feet per second retained.

$Q = VKab$.

If $K=0.8$, $a=5$ feet; $b=300$ feet; $V=5$ feet; then $Q=6,600$ cubic feet.

Can be placed in shallow water.

PRICE OF POWER.

The price of power in Buffalo is greater than at inland points such as Syracuse. No benefit in price would come to our citizens by giving the balance of the water, 4,400 feet, to the present companies at the Falls.

On the other hand, this new company, being entirely free from any of the interests and getting 2.3 times the amount of work out of the water over the Niagara Falls Power Co., will be operating on more economical lines and will deliver power at a less cost to the entire frontier.

REVENUES.

Your attention is called to a sentence in Mr. Randolph's introduction: "The only incentive to any other agency for undertaking this work is a commercial one, and that incentive is sufficient to induce capital to invest in the necessary work." Our revenues will come not only from power, but from rentals of right of way, docks, warehouses, etc.

STATE HEALTH OFFICER.

Dr. E. H. Porter, State health officer, recently stated in Buffalo that he considers the best plan is to divide the State into watershed sections for purposes of sanitation and disposal of sewage; this canal will care for this populous section of the western watershed under such a comprehensive plan without cost to the State.

SUMMARY.

In answer to the question, What are the principal reasons why this company should obtain the grant, we say:

1. Because we give compensation worth many millions to the public in the shape of flood abatement and sewage disposal.
2. Because we purify the east end of Lake Erie and Niagara River.
3. Because we bring the Barge Canal into Buffalo and Lackawanna and furnish terminals to the State.
4. Because we carry out the doctrine of conservation of natural resources.
5. Because by reason of having pure water the typhoid rate will be reduced over 50 per cent, as has been proved in Chicago.

STATEMENT OF MR. MORRIS H. ALBERGER, OF BUFFALO, N. Y.

The CHAIRMAN. Please give your name to the stenographer, your residence, and whom you represent.

Mr. ALBERGER. My name is Morris H. Alberger, and I am a resident of Buffalo, N. Y. I am here in my own personal interest, Mr. Chairman and gentlemen of the committee, and the interest of the Niagara County Irrigation & Water Supply Co. There is very little I can say, gentlemen. The ground has been so well gone over to-day that there is not even a drop of water left for me, as far as I can see. It is pretty nearly all gone. [Laughter.] All we ask you gentlemen is to give us a square deal. We felt that we stood in the same position with these other companies. We had our capital raised; we had our rights of way procured; we had riparian rights, the same as our friends had; we had everything ready to construct our canal when this little legislation came along in the shape of the Burton bill. We have an investment there of over \$400,000, and up to this day you gentlemen have not had any kick from us. Now, you have a little bit of water that is coming to you through the treaty. Why, in God's name, can you not let us have it? We can do more with that 4,400 cubic feet of water than our friends the Niagara Power Co. can do with their 8,600 cubic feet of water. We can not do quite as

much as this gentleman (Mr. Bowen) says he can do, because he has got to demonstrate to me—I am from Missouri just now—that there is that fall of 327 feet between Lake Erie and Lake Ontario. It is not so on the engineering maps that I have been studying. I have been pretty familiar with the frontier for the last 50 years. I think Gen. Greene stated here this morning that in 1857 people walked across the Falls. I was one of the people. I was there at school at that time.

Gen. GREENE. I am glad to have such good backing.

Mr. ALBERGER. The wind has a great deal more to do with it there than anywhere else, except in Washington, and I find a good deal here.

Mr. MADDEN. Mr. Alexander made a statement about that.

The CHAIRMAN. What I said was that a number of years ago I walked over to the First Sister Island from Goat Island, which I presume is done very frequently now.

Mr. ALBERGER. It is a fact that last winter a man walked from the head of Goat Island to Navy Island; but it was on the ice, and it was good thick ice at that time. As I stated before, there is very little more to be said in regard to this matter. We have our rights from the State of New York. We have paid our corporation tax year by year. We have paid our school taxes and have paid our State taxes and we have been good citizens. Now, we want fair treatment. This is only a little bit of water. The Niagara Power Co. could not take it. If you give it to them they can not use it. They can not use the water they have there now. I will take the statement that Mr. Barton made to the Secretary of War, and contained in the report of Capt. Kutz, that they have not sufficient tunnel capacity to dispose of their entire water power at the present time, if they use all of it. Of course, part of their power goes as hydraulic power to the International Paper Co. The company stated at the hearing in Buffalo that they did not want all of the 4,400 cubic feet. It is a question whether the Hydraulic Co. could use it all without tremendous expense. We have had a statement by Gen. Greene this morning about the initial cost of a horsepower. From his statement we know what it is in Canada, i. e., \$100 per horsepower. We know what it is from the statements and reports made by the Niagara Power Co. covered in the report of Capt. Kutz, United States engineer. I want to say to you, sir, that I can make electric power on the Niagara frontier for \$60 a horsepower, initial cost; and I am prepared to go ahead and construct a plant and deliver power to Buffalo City at a very much reduced cost. I can generate from that 4,400 cubic feet of water 105,600 horsepower, and I do not take off anything for friction or lack of head or anything else. We have not got 327 feet of head. Our head is 300 feet; actually 296 feet.

Mr. MADDEN. How much less could you sell this electrical energy per horsepower than stated by Gen. Greene this morning, namely, sixteen to thirty dollars, according to the distance?

Mr. ALBERGER. It should come from \$10 to \$12.

Mr. MADDEN. \$10 to \$12 less?

Mr. LAWRENCE. He does not mean that.

Mr. ALBERGER. No; a rate of \$10 to \$12.

Mr. MADDEN. And he sells at from \$16 to \$30?

Mr. ALBERGER. Yes, sir. Of course that does not take into consideration a transmission line, which is a very heavy expense to the Ontario company.

Mr. MADDEN. You would have to have a transmission line, would you not?

Mr. ALBERGER. Only to the city of Buffalo, a very short distance. Gen. Greene's transmission line was very expensive.

Mr. MADDEN. About 160 miles away from the base of supply?

Mr. ALBERGER. Yes; away from the head.

Mr. MADDEN. How far would you carry it?

Mr. ALBERGER. Eleven miles.

Mr. EDWARDS. As against how far carried by his line?

Mr. ALBERGER. About 200.

Mr. MADDEN. And you can make it \$10 where he makes it \$16?

Mr. ALBERGER. Yes, sir.

Mr. YOUNG. \$10 to \$12.

Mr. ALBERGER. \$10 to \$12.

The CHAIRMAN. We are very glad to have heard from you.

Mr. ALBERGER. Are there any questions?

The CHAIRMAN. I want to ask Mr. Cohn one question. Possibly you may have stated it this morning. What was the date when permission was given by the State to enlarge the Schoellkopf Canal?

Mr. COHN. I would not express it that way. I do not think we were ever given permission to enlarge; but our right to take water from the river was confirmed by an act passed in 1896. The question came up in this way: The constitutional convention investigated the whole subject of the use of the waters, and got an opinion of the attorney general, and as the result of the agitation at that time we thought that the State, as the riparian owner, had a right that we would have to get released.

The CHAIRMAN. Mr. Lovelace, my recollection is that your grant was in 1886?

Mr. LOVELACE. Yes, sir; in 1886.

Mr. ALBERGER. Ours was in 1891.

Mr. LOVELACE. The grant of the State of New York to the Niagara Falls Power Co. was about the end of 1886. There have been various amendments to that act since that date, but the original act was passed at that time.

Now, Mr. Chairman, that you have called me to my feet, I do not care to enter into the discussion, but there is one little phase of the matter that has been mentioned here, and I do not want the committee to get a wrong impression of it. It is the comparison of the amount of power that can be produced by any particular company. The Niagara Falls Power Co., of course, has not the same head as some other companies; but the reason for that is that when this company was organized there was already a sentiment in vogue in the State of New York, and over the whole land, that the beauty of Niagara Falls should be preserved, and for that especial reason the Niagara Falls Power Co. went one mile and a half above the Falls, and there made a large investment in lands, and sunk its pits and drove its tunnel from that place. That meant that we must sacrifice so much head. That was done for the preservation of the beauty of Niagara, and that has been recognized in official statements of this committee.

It has been recognized in their reports to Congress with the bills which were introduced. It has been recognized by the "Beauty Commission"—we familiarly call it that—appointed by President Taft, when he was Secretary of War, and even by the society of which Mr. McFarland is the president. Of course, that is not an answering argument to dream companies, which propose to go still farther away from the Falls in different directions; but it is an argument as to all of the companies that already have made considerable development and are now producing power from the Niagara River.

Mr. COHN. No such comparison was made by me or suggested by me on behalf of our company.

Mr. LOVELACE. It has been stated here that Senator Depew and Mr. Reid, present ambassador to Great Britain, at some time had been directors of the Niagara Falls Power Co. Mr. Scovell, who made the statement, is in error. Neither of the gentlemen mentioned was ever a director of the company.

Mr. Alberger has just said that in a statement by Mr. Barton, the vice president and general manager of our company, to the Secretary of War, contained in the report of Capt. Kutz, it was stated that the Niagara Falls Power Co. had not sufficient tunnel capacity to dispose of its entire water if it uses it all. The report of Capt. Kutz referred to is an official document now on file in the office of the Chief of Engineers, known as War Department Document No. 289. Mr. Barton's statement is printed there in full commencing on page 12. It does not contain the statement alleged by Mr. Alberger, nor does it contain any statement from which any such condition may be inferred; on the contrary, it makes the following statements:

EXTENT TO WHICH PLANTS ARE IN ACTUAL USE.

- (a) Power house No. 1, with a capacity of 50,000 horsepower; all in use.
- (b) Power house No. 2, with a capacity of 55,000 horsepower; all in use.
- (c) The hydraulic power plant of the International Paper Co., with a capacity of 8,600 horsepower; substantially all in use.
- (d) The hydraulic power pumping plant of the Niagara Falls Water Works Co., with a capacity of at least 500 horsepower; substantially 500 horsepower of which is in use.

The plants named in (c) and (d) are parts of the power development made by the Niagara Falls Power Co.

AMOUNT OF ELECTRICAL POWER ACTUALLY GENERATED.

The amount of electrical power actually generated by the Niagara Falls Power Co. is substantially 90,000 electrical horsepower maximum. In addition thereto substantially 9,000 horsepower in the form of hydraulic power is generated by its said power tenants, operating under its rights for power development.

It also contains a further statement that the amount of water then actually in use by the company was 8,600 cubic feet per second—that being the limit of our permit under the Burton act at the time the statement was made. In 1906, when Mr. Barton's statement was made, the accurate measurements made later of the amount of water required to operate the entire installation of the company then in place had not yet been made.

Chairman Alexander has requested me to add to this statement a concise statement of facts in respect of the measurement by the lake survey in 1908 of the effect on the American Falls of the complete

shutdown at that time of the companies diverting water on the American side of the river:

On July 19, 1908, the Niagara Falls Power Co. shut down its entire plant for certain repairs to its tunnel, and for several days made no diversion of water from the river. During a part of the period the Hydraulic Power Co., in order to afford the United States Lake Survey an opportunity to make measurements of the effect of diversion on the Falls, also shut down completely. Careful measurements were made by the United States Lake Survey lasting over the period of the shutdown and several days both prior and subsequent thereto. The results of these careful measurements and calculations proved that diversion of the full authorized diversion at that time of 15,100 cubic feet of water per second lowers the crest of the American Falls 0.03 foot—that is, about three-eighths of an inch.

The CHAIRMAN. Is there anything further? If I have omitted anyone, we will be very glad to hear from him.

Mr. HOWARD. You asked a question which was not answered by one of the gentlemen. It was in regard to how much the crest of the Falls was lowered by the present power companies, and how much it would be lowered by taking this 4,400 feet additional. By statistics and data that I have gotten together, variously, for some time back, taking the whole 365 days in the year over a period of five years, the lowering of the crest of Niagara Falls between Canada and the United States is just about three-tenths of an inch; and the taking of this additional water would lower it a little more than one-tenth in addition.

Mr. MADDEN. Say four-tenths of an inch?

Mr. HOWARD. It would make the total about four-tenths of an inch, on data as honest as can be gotten together. I can further say that there is a community of interests in this, because the power companies who wish to compete to obtain the water desire in no way to injure the scenic beauty of Niagara. If the company that has called me in desired that, I would return the fee and drop out instantly. I want that in the record, if you please. But I think that the scenic beauty will not be affected, and that it will come out just the same in the end.

(The committee thereupon adjourned.)



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