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McNaughton relating to the Columbia-
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COMMUNICATIONS

WITH GENERAL A.G.L. McNAUGHTON

RELATING TO

THE COLUMBIA RIVER TREATY

AND PROTOCOL

February 1964

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COMMUNICATIONS WITH GENERAL A.G.L. McNAUGHTON
RELATING TO THE COLUMBIA RIVER TREATY AND PROTOCOL

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A. ATTENDANCE OF GENERAL A.G.L. McNAUGHTON AND OFFICIALS OF THE CANADIAN SECTION OF THE INTERNATIONAL JOINT COMMISSION AT MEETINGS RELATING TO THE DEVELOPMENT OF THE COLUMBIA RIVER

(a) Columbia River Negotiations (1960-61)

Canadian Negotiators:

The Honourable E.D. Fulton, Minister of Justice

Mr. R.G. Robertson, Deputy Minister of Northern Affairs and National Resources

Mr. A.E. Ritchie, Assistant Under-Secretary of State for External Affairs

Mr. E.W. Bassett, Deputy Minister of Lands, Province of British Columbia

Representatives of the Canadian Section of the International Joint Commission were present at all nine meetings with the United States negotiators.

(b) Cabinet Committee on the Columbia River (1957-1961)

Members: The Honourable Alvin Hamilton (Chairman)

The Honourable Howard Green

The Honourable E.D. Fulton

The Honourable D.S. Harkness

The Honourable Walter Dinsdale

The Honourable Hugh John Flemming

(The Honourable G.R. Pearkes)

(The Honourable A.J. Brooks)

(The Honourable S. Smith)

Between September 27th, 1957 and the signing of the Treaty on January 17th, 1961, the Committee held 33 meetings. General A.G.L. McNaughton was present at 26 of these meetings and was represented by advisers at three other meetings.

(c) Canada-British Columbia Policy Liaison Committee

Federal Government Members:

The Honourable Alvin Hamilton

The Honourable Howard Green

General A.G.L. McNaughton

Mr. A.F.W. Plumptre, Assistant Deputy Minister of Finance

Federal Government Members (Cont'd):

Mr. D.M. Fraser, Department of Trade and Commerce

Mr. R.G. Robertson, Deputy Minister, Department of Northern Affairs and National Resources.

Between April 28th, 1959 and the signing of the Treaty, the Committee held 13 meetings. General A.G.L. McNaughton was present at 11 of these meetings, was represented by advisers at the other two.

(d) Canada-British Columbia Technical Liaison Committee

Federal Government Members:

Mr. T.M. Patterson, Director, Water Resources Branch, Department of Northern Affairs and National Resources

Mr. K. Kristjanson, Department of Northern Affairs and National Resources

The International Joint Commission was not represented on the membership of this Committee.

(e) International Work Group - Columbia River Negotiations (1960-61)

Canadian Members:

Mr. P.R. Purcell, Department of Northern Affairs and National Resources

Mr. H.T. Ramsden, Department of Northern Affairs and National Resources

Mr. G.M. MacNabb, Department of Northern Affairs and National Resources

Mr. G.J. Kidd, British Columbia Water Rights Branch

Mr. J.L. MacCallum, Canadian Section, International Joint Commission

Mr. MacCallum was present at all meetings of the Work Group and was accompanied at times by Mr. E.R. Peterson, former engineering adviser to General A.G.L. McNaughton.

B. MEETINGS BETWEEN GENERAL A.G.L. McNAUGHTON AND THE HONOURABLE PAUL MARTIN

On July 15th and 18th, 1963, General A.G.L. McNaughton met with the Honourable Paul Martin and federal government officials to discuss his views on the Columbia River Treaty and suggestions for a Protocol to that Treaty. These meetings were followed by the exchange of correspondence given under Item C.

Federal [illegible]:

[illegible] Department of Trade and Commerce

[illegible] [illegible] Department of Northern Affairs and National Resources.

[illegible] the [illegible] of the Treaty, the

[illegible] A. [illegible] McNaughton was

present [illegible] or advisers at

the [illegible].

(d) [illegible] Committee

Federal [illegible]:

[illegible] Water Resources Branch, [illegible] of Northern Affairs and National Resources.

[illegible] of Northern Affairs and National Resources

The [illegible] Commission was [illegible] represented on

the [illegible].

(e) International [illegible] Columbia River Negotiations (1960-61)

[illegible]:

[illegible] of Northern Affairs [illegible] Resources

[illegible] Department of Northern Affairs and National Resources

[illegible] of Northern Affairs and National Resources

[illegible] Water Rights Branch

[illegible] Section, [illegible] [illegible]

[illegible] meetings of the Work Group

[illegible] by [illegible], Farmer

[illegible] McNaughton.

[illegible]

On [illegible] McNaughton met with the

Honourable [illegible] officials to discuss his

views [illegible] to that

Treaty. [illegible] of correspondence

given [illegible].

CORRESPONDENCE BETWEEN GENERAL A.G.L. McNAUGHTON

AND THE

DEPARTMENT OF EXTERNAL AFFAIRS - 1963-64

REGISTERED MAIL - SPECIAL DELIVERY

OTTAWA, August 6, 1963

Dear General McNaughton:

I want to tell you how much I have appreciated the assistance you have provided to me during the three discussions on the Columbia River Treaty which have been held in my office during recent weeks. The development of the Columbia River for hydro-electric power and flood control protection is of course a very technical and detailed subject, and having the benefit of your opinions has greatly assisted me in orienting myself.

On a subject of such complexity and concerning which there are so many divergent interests, it is inevitable that there will be bona fide differences of opinion among those who are genuinely seeking to move forward the best interests of our country. In the result an international agreement will reflect a composite of views rather than all the ideas of any single individual.

Your opinions on the Columbia River Treaty quite rightly carry a great deal of weight, not only with myself but throughout this country. It is for this reason that I am deeply concerned over your criticism of some of the provisions of the Treaty. On the basis of what has been stated at our meetings I would like to summarize very briefly some of your major objections to the Treaty and then set out comments and questions on what actions might possibly be taken in this regard.

The paper which you distributed at our meeting on the 18th of July dwelt on three basic issues. The first of these concerned the problem of what projects should be constructed in the Columbia River basin in Canada. You objected to the Treaty projects of High Arrow and Libby and suggested as an alternative the Bull River-luxor projects in the Upper Columbia and East Kootenay Valleys. This is a suggestion which has of course received a great deal of attention and which was debated in detail during the Treaty negotiations themselves. The problem associated with such a suggested change of projects, aside altogether from the conclusions of engineering firms which support the High Arrow development, is the problem of jurisdiction. From the records which are available, it would appear that the Province of British Columbia, which under the British North America Act has jurisdiction over the water resources of that Province, considered the alternatives and then selected the present Treaty projects for inclusion in a co-operative plan of development. You yourself have testified that once the responsible government has reached a decision that a certain project cannot be built, it is idle exercise to go on considering it. This would now appear to be the case with the Dorr, Bull River-Luxor reservoirs and, in the absence of any indication from the Province that they are prepared to reconsider their decision, I can see no practical alternative but to accept it. We can of course prevent objectionable developments of the Columbia River through our powers under the International River Improvements Act. However, on the basis of engineering evidence we would have no reasonable basis for doing this in the case of High Arrow. Moreover, while we can prevent certain developments we cannot insist that others should take place. I would certainly like to hear your views as to what action you would take in this problem of project selection. And perhaps you would also wish to consider whether the additional benefits achieved by such alternative projects are not secured at a cost so high that their value is dubious, as compared with the cost of an equivalent amount of power from other sources.

The second point covered by your paper of the 18th of July dealt with control of Canadian storages. In this instance we know that three separate engineering studies by respected engineering firms have concluded

that the Treaty does protect Canada's freedom of operation to make the best use of Columbia River water within Canada. These studies perhaps interpreted certain sections of the Treaty more favourably than you do, so the question which remains is, if the interpretation used by the consultants is definitely established by a Protocol to the Treaty, do you accept the findings of these engineering firms and if so does this fully meet your concern in this regard? May I add that I think you place altogether too much stress on the role of paragraph 3 of the Preamble and give it an interpretation unfavourable to Canadian interests that, in my opinion, and seemingly in Professor Cohen's opinion, it does not warrant.

The third and last point set forth in your paper concerned the downstream benefits to which Canada is entitled under the Treaty. First, with regard to the flood control payment of $64.4 million, this payment cannot in all fairness to compared with costs of $700 million in the United States to provide the same service. The $700 million investment by the United States would provide not only the flood control benefits, but also power bebefits equivalent to those provided by Canadian storage. United States sources indicate that with the addition of the Bruces Eddy and Knowles projects in the United States, the flood control payment to Canada called for under the Treaty is equal to roughly 100% of the flood damage prevented by Canada storage (beyond that which would have been prevented by the increased United States storage) rather than the 50% called for by the I.J.C. Principles. Whether or not this is true, conditions certainly are changing and nearly all of these changes make it even more difficult to consider United States acceptance of substantial increases in Treaty benefits to Canada. Can you tell me whether language in the Protocol indicating some reasonable limitations on the use of Canadian storage for flood control purposes, under the present Treaty, would meet at least some of your concern on this point?

Your statement that Canada receives only 40% of the power benefits from the Treaty is difficult for me to comment on, as the wording of the I.J.C. Principles and the Treaty seem so similar in this respect. The Principles call for division of power benefits as such without getting involved in the value of power to either country and the Treaty follows this approach.

I realize that the aforementioned three points do not fully cover all your criticism of the Treaty, but as you have noted, most of your specific criticisms stem from these points and are therefore covered indirectly if not directly. I feel that we may be able to meet some of your concern on these aspects, but with regard to others, particularly those which concern aspects outside of the jurisdiction of this government, it may be that the final decision will have to be between adjustments in the present Treaty by way of a Protocol or no Treaty at all. As no studies apparently exist which show the Columbia development within Canada to be a viable proposition at this time without international co-operation, a decision which made a Treaty impossible would be a most serious matter. The loss of employment possibilities and other economic gains now and over the longer future is a matter of great concern. However, this is a question on which we must take a decision and it is for this reason that I am particularly indebted to you for being so co-operative in providing both time and effort so that I may be fully aware of all facets of the problem.

Now that I have had an opportunity personally to survey the entire length of the Columbia River, as well as the Kootenay in Canada and the sites of all the Treaty storages as well as the existing and planned U.S. facilities, I am more than ever impressed with the potential value of this great development. I do believe that co-operation in its execution, as contemplated by the Columbia River Treaty, is capable of providing benefits to both countries that are greater than either could achieve without co-operation. I have reason to believe that it will be possible to secure modifications and clarifications of the Treaty by means of a Protocol that will meet some of your criticisms as well as deficiencies that I and my colleagues saw in the original Treaty. When the Protocol is signed, I hope you will feel that the arrangement as a whole merits your support.

In a sense it is a tribute to your own perception and perseverance, embodying as it does the revolutionary concept for which you were in large part responsible - the sharing of downstream benefits between the two countries.

Once again, my warm thanks for your help.

Yours sincerely,

(Sgd.) Paul Martin

General the Honourable A.G.L. McNaughton
Fernbank Road
Rockcliffe Park Village
Ontario

A.G.L. McNAUGHTON

393 FERNBANK ROAD
ROCKCLIFFE PARK
OTTAWA, CANADA
SH 9-7002

August 22, 1963

The Hon. Paul Martin, P.C., M.P.,
Secretary of State for External Affairs,
East Block,
Ottawa.

Dear Mr. Martin,

Further to my note of 12 August 1963 in which I acknowledged receipt of your letter of 6 August 1963, which had then just reached me.

In the meantime, I have made opportunity to review available information in respect to the various matters and queries which you have raised, and to consider again the conclusions which I have previously drawn therefrom.

I think I should say frankly that I remain firmly convinced of the superior merit of the I.J.C. plan Sequence IXa for the development of the Columbia and of the paramount necessity that the physical and jurisdictional control of the flow from the Canadian reservoirs and the determination and the allocation of the downstream benefits therefrom to power and flood control be brought back into accord with the principles presented by the I.J.C. in the report to Governments of 29 December 1959 setting out the principles which should govern these matters.

The basic reason why the right of Canada to control our own waters within our own territory must be maintained, free of servitude, is set forth and explained in my Article in the 1963 Spring Issue of the INTERNATIONAL JOURNAL, a copy of which I sent you.

In the course of the last several days, I have gone over the matters mentioned in your letter and I have reached the conclusion that the information required is given comprehensively in my article in the INTERNATIONAL JOURNAL and I confirm that this article correctly presents my views on the several points.

Therefore I think that what is required of me is that I should respond to your question as to what I would myself do in existing circumstances.

I recall that the engineering consultants appointed by the British Columbia Government appear to have been given terms of reference strictly confined to the Treaty projects only. At any rate, their published reports do not embrace the alternatives, and in particular the very great advantages to Canada which I consider we would secure from sequence IXa are not reflected in their presentations.

I consider that this is an extremely unsatisfactory position for the responsible Government on the eve of decision.

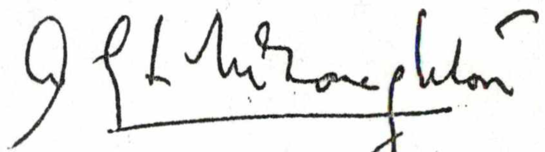
I would, therefore, and at once, before entering into any further commitment, whether by Protocol or otherwise, appoint an independent consultant and call for a report to include the alternatives not yet included in consultant studies - specifically, the sequence IXa alternative.

I am confident that such a study will endorse the full diversion to the Columbia and provided this plan is thus confirmed, I would forthwith reject High Arrow and Libby and declare that any plan for the development of the Columbia, to be acceptable to the Government of Canada will include the Dorr Bull River-Luxor storages in the East Kootenay.

My reason is that it is these high-altitude storages which provide the flexibility which is essential in the operations for flood prevention and power production, and which position the stored waters of Canadian origin where they will remain under the physical as well as the jurisdictional control of Canada.

I would also direct that a public hearing under the International Rivers Improvement Act be held in the Arrow Lakes and Windermere areas so that the Government may ascertain at first hand the views of the people of these regions. Surely it is a requirement of simple justice that the people most affected shall be heard from before any definitive negotiation is entered into.

Very sincerely,



A. G. L. McNaughton.

OTTAWA, September 10, 1963

Dear General McNaughton:

Thank you for your letter of the 22nd of August in which you reply to my letter of the 6th of August. Once again I wish to thank you for the time and effort which you continue to devote to explaining your interpretation of the points which we put before you concerning the Columbia River Treaty.

My letter of the 6th of August dwelt on the three basic objections to the Treaty which you gave to me at a meeting in my office on the 18th of July. You have provided a direct answer to my queries on the first of these points, that involving the proper selection of Treaty projects; have indirectly replied to the second point, control of Canadian storage; but do not seem to have touched on the last point which was a comparison of a $700 million investment in the United States to the $64.4 million flood control payment to Canada under the Treaty. Perhaps the best way to answer your recent letter is to review these points once more in the light of the opinions expressed in that letter.

Your letter suggests that the Government of British Columbia, the Government responsible for final project selection, did not have a competent study of all the alternative schemes of Columbia River development made by engineering consultants. You express confidence that had such a study been made it would have supported the Sequence IXA plan of the International Columbia River Engineering Board. The Government of British Columbia of course participated in the work of the I.C.R.E.B. and were aware that the 1959 report by this Board did not specifically prefer the Sequence IXA plan but rather indicated that, from a purely national viewpoint, the extra energy produced by that plan over alternatives involving lesser amounts of Kootenay River diversion, did not appear attractive.

The British Columbia Government, however, did undertake and complete an engineering study of its own prior to making its decision on the flooding of the East Kootenay Valley. In July of 1956 the engineering firm of Crippen Wright Engineering Limited was given very broad terms of reference covering not only a thorough study of all possibilities of Columbia River development, but also the effects of integrated operation with the Clearwater system. The resulting engineering report dated January 1959 encompasses nine substantial volumes and does not recommend Sequence IXA plan but rather finds it uneconomic in comparison with plans involving lesser diversions. In addition to the findings of that engineering firm the Province no doubt had access to the 1957 report to the Federal Government in which the Montreal Engineering Company recommended a diversion by a low structure at Canel Flats plus the High Arrow project in any cooperative plan of development of the Columbia River.

General A. G. L. McNaughton
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Rockcliffe Park
OTTAWA, Ontario

It would therefore appear that studies by engineering firms as well as by Federal Government engineers do not support the Sequence IXA plan, but rather favour a limited diversion involving less expense and flooding in Canada. Barring a complete lack of faith in these conclusions, as well as in the conclusions reached by federal government engineers who have produced their own studies and assisted the I.C.R.E.B., I really can see little advantage in calling for further studies on a matter which has been decided by the responsible Government. Unless it were clear beyond reasonable doubt that a plan of development favoured by the owner of the resource, the provincial government, was positively prejudicial to the national interest, I do not see how the federal government could properly oppose or prevent it. As I mentioned in my letter, I think this view is in line with the opinions you yourself expressed at one stage before a House of Commons committee.

Perhaps our comments on this first point lead us automatically into the second; that of Canada's ability to control the operation of the Treaty storage in a way which will safeguard power generation within Canada. Your article in the 1963 Spring Issue of the International Journal, to which your letter refers, dismisses the control we have maintained, and questions Canada's ability to proceed with the full development of sites such as Mica, Downie Creek and Revelstoke Canyon. Once again I must refer to the conclusions reached by engineers and engineering firms who have studied this aspect of the Treaty. Three engineering firms, Montreal Engineering, Caseco Consultants Limited (H. G. Acres, Shawinigan Engineering and Crippen Wright Engineering) and the combined firms of Sir Alexander Gibb and Herz and McLellan also support the Treaty in this respect.

I note that your article in the International Journal refers to a sentence in the Gibb-Herz McLellan report which states that releases from Canadian storage under the Treaty terms will be out of phase with Canada's own needs, and we will therefore be subjected to penalty payments. The next sentence of the Gibb report, however, goes on to say:

> "Fortunately...Arrow Lakes can largely absorb the difference in outflow so that, except in three months, the flow to the U.S.A. remains the same as that required for optimum downstream benefits".

The Companies reported to the B.C. Energy Board as follows:

> "The flexibility allowed under the Treaty for the operation of these storage reservoirs will enable the Canadian power plants on the main stem to be operated in the interests of the British Columbia load and without serious reduction in the amount of the downstream benefits".

I am not all clear whether you disagree with these conclusions. If you do, the reasons behind your objections are not set out in detail in the International Journal article and it would be helpful to me if you could advise me of them.

The third point covered by my letter of the 6th of August was not mentioned in your reply so perhaps that point can be left at this time.

I am sure that you realize the position that I am in. My decisions on this matter should be based on all the evidence available to me. To date you appear to be the only engineer with an intimate knowledge of this subject who seriously questions the conclusions reached by other engineers and engineering firms. I am making every effort in the present negotiations on the Protocol to plug loopholes in the present Treaty. Having great respect for your insight in such matters, I would find it very helpful if you could advise me in detail on some of the specific points I have referred to. I hope that we will be successful in obtaining a Protocol which will meet your concern on a great many points.

Yours sincerely,

(Sgd) Paul Martin

Paul Martin

A.G.L. McNaughton

393 Fernbank Road
Rockcliffe Park
Ottawa, Canada
SH9-7002

23 September 1963

The Hon. Paul Martin, P. C.
Secretary of State for External Affairs, Canada,
House of Commons,
Ottawa.

Dear Mr. Martin:

Thank you for your letter of 10 Sept. 1963 in reply to mine of 22 August 63. I will endeavour to answer the points you raise paragraph by paragraph in sequence.

Re your Para 2. I note your reference to the three particular objections to the Treaty of 17 Jan 1961, which I had mentioned in the Brief I presented to you on 18 July 63.

I am glad you agree I have answered your queries on the first, namely the proper selection of the treaty projects. Also, I hope you agree with the considerations I have advanced in regard to the second point relating to the control of <u>the</u> Canadian storages. I note you say I have indirectly replied, by which I understand you refer to my article in the Canadian Institute of International Affairs Journal, Spring 1963 issue, of which I sent you a copy some weeks ago.

In this I think I have given an exposition of the <u>defects</u> in the current draft treaty, which in my view, it is imperative should be corrected. I conclude from the last paragraph of your letter that some at least of these points have met with your acceptance, but as I think you know, I do not think a protocol can correct the basic faults.

In regard to the third point, which is my comparison of the costs and benefits of the Canadian storage to the United States for flood control, you have stated that I have omitted to reply. I will therefore do so now. The statement in my Brief of 18 July 63 reads, "for flood control, $64 million is the payment for a service which would cost the U.S. $700 million".

The figure given by the U. S. Secretary of the Interior to the U. S. Senate Committee (8 March 61) (Page 26) is $710 million. While this figure does include the cost of some additional services in the U. S., the simple fact is that the U. S. must make the whole of this investment before the flood control protection can become available. Moreover, the Canadian storages are unique in that they are the only available sites in the basin which lie across the line of flow of floods originating upstream on the Columbia and therefore provide a service which can never be fully duplicated in the U. S.

Your suggestion that in an assessment of relative advantages received, the $64 million payment to Canada should be increased by a share of our power benefits, in my view relates to another transaction and is not relevant to the flood control comparison I have made, which, as stated, represents a very modest expression of the immense benefits which the U. S. receives and which are drastically undervalued in the $64 million arrangement proposed.

I hope the treaty will be revised to include a payment for "primary" flood control only which will represent, in fact, half the actual damages prevented by the Canadian storages as measured in the condition of actual development in the areas at risk from time to time. I hope also IJC Flood Control Principle No. 6, to give added protection in the U. S. in the case of floods of exceptional great magnitude, will be re-instated, this to be made on call, subject to a provision to prevent abuse and damage to Canadian interests. I have dealt with the various aspects of flood control in detail in my CI of IA article.

Re your Para 3. I do not agree that the government of B. C. is the government responsible for final selection, by which I understand you mean the ultimate decision. The Columbia and the Kootenay are rivers which flow out of Canada, and, under the BNA Act, Canada, by the International River Improvement Act, has asserted jurisdiction.

The Government of Canada is therefore the final authority and is responsible, at the least, that harm is not done to Canada. These are the words I have heard used by competent legal authority and with which I find myself in complete agreement.

In this connection, you may wish to have looked up for you the statement made by the Hon. Jean Lesage in July, 1955, when he held the office of Minister of Northern Affairs and National Resources in the St. Laurent administration (see Electrical Digest, July, 1955) and was responsible for the presentation of the International Rivers Bill to Parliament.

As regards your comments on the ICREB Report of March, 1959, this report did not recommend any particular plan of development but merely supplied data on which the various plans studied physically could be compared economically. The following are the ICREB figures for the Canadian projects in the Copper Creek (Seq Viii) and Dorr (Seq IXa) plans respectively:

	Investment Cost ($ million)	Output (MW)
Copper Creek	884.9	2523
Dorr	911.8	2691
Dorr increase	26.9	168

These figures evidence a substantial increase in output for Dorr for Canada for a small additional cost. However other factors, which have deep significance in the protection of national interests, also must be considered in an overall comparison. In this connection, I would like to say that under Article IV of the Treaty of 1909, the U. S. cannot develop Libby economically without permission to flood 150' deep at the boundary, extending upstream into Canada some 42 miles. Moreover, under Article II, Canada has jurisdiction to divert flows originating in Canada and to store and regulate these flows as may be advantageous. Under this authority, 5.8 million acre feet of average annual flow could be diverted from the Kootenay and used down the Columbia through an additional head in Canada of up to 688 ft after allowing for pumping the flow at the Elk; this represents in excess of 350 MWY of average annual usable energy. This regulated flow will contribute materially to the maintenance of heads at the Canadian plants, to the flexibility of regulation, and to an increase in the peaking capability at the Canadian plants of the Columbia alone of about half a million KW.

Moreover, the water stored in Dorr-Bull River-Luxor, as well as in Mica, all of which is of Canadian origin, will be physically as well as jurisdictionally under the sovereign control of Canada, to regulate and to divert as Canada's interests and those of her provinces determine. I remark that in the case of the Pend d'Oreille, similar rights were claimed by the U. S. and recognized by the IJC in the Waneta Order, so that in this diversion of the Kootenay to the Columbia, we have adequate precedent established by our neighbour.

For Canada, it is vital and imperative that this jurisdiction should be maintained. From this "Canadian best use value" within the Columbia

River System as prescribed in the instructions to the IJC of 28 and 29 Jan 1959, there is a wide and ample opportunity to provide additional benefits in power and flood control which may be shared equitably with the U. S.

In connection with the Dorr Plan, I would mention further that the Department of Agriculture has reported that the development of the East Kootenay storages will have a beneficial effect on agriculture. This advice was given in a letter signed by S. C. Barry, Department of Agriculture, addressed to the Secretary, Canadian Section, IJC, dated 14 June 1960, and I mention it in case this communication has not been brought to your attention.

In your Para 4, you make reference to the Crippen Wright report dated 9 July 1959 and comprising, you mention, "nine substantial volumes". I received this report direct from the government of BC the day before I left for Washington to commence the negotiations of the IJC Principles. The general part of the report proved useful to me in making my presentation to my U. S. colleagues and later I was able to peruse the whole report which provided a mass of information relative to a multiplicity of possible sites and alternatives for power dams and storages, including tentative schedules of construction, installed capacities and the like. This was useful in checking the physical proposals made by the ICREB, and I think served to confirm the selections which had been made of the individual projects. However I do not recall that any of the volumes I have seen contained any comprehensive summary or comparison of the relative merits of these projects when combined in the several IJC sequences.

If there is such a report as you mention, I would be grateful for a specific reference, or a copy, when I will at once discuss it with Mr. Crippen, with whom I have the pleasure of being acquainted.

In your Para 4, you make reference also to the report made to the Federal Government by Montreal Engineering in 1957. I recall that a number of the sites proposed for development by this report became eliminated in the course of the ICREB and IJC discussions. Certainly I do not recall that it contains any proof that we should depart from the Dorr Plan with its manifest advantages to Canada in cost-saving, power production, flexibility of regulation for Mica and the other great Canadian plants, and in what, it now turns out as a result of experience, is the paramount necessity of maintaining Canadian jurisdiction and control over waters of Canadian origin.

I notice that nowhere have you mentioned the 1961 Report of the same company. I raise this matter to say that I have re-read this report recently. I find it was commissioned by letter from the Deputy Minister NA and NR, under date of 15 April 1961, and that it was presented on 15 May 1961, that is, one month and two days later!! The letter of transmittal evidences close participation by an officer of NA and NR. The report is confined to the Treaty projects and there is <u>no</u> mention whatever of Dorr-Bull River-Luxor.

So this report also provides no basis whatever for comparison of the Copper Creek and Dorr plans. It is however of particular interest because it makes three important specific criticisms of the Treaty of 17 Jan 1961, namely:

1. In regard to Article X of the Treaty, on Page 15 the following appears:

"...under the design assumptions...the downstream benefits...could be transmitted on a firm basis to the load centres over the 345,000 volt system <u>without necessity of the standby transmission in the United Stated</u> specified in Article X of the Treaty. Hence payment by Canada for standby transmission would <u>not be necessary</u> if an inter-connection agreement could be negotiated with the United States".

I made some reference to Article X in my CI of IA article and elsewhere I have described it as a device to impose on Canada the cost of transmission of Canada's half (?) share of the downstream benefits from the point of

generation in the U. S. to the boundary near Oliver, B. C. In this connection you will find Mr. Udall's remarks (U.S. Senate Committee, 8 March 1961, PP 25 and 26) of interest. Article X also means that until Canada enters an inter-connection agreement, whatever its terms, Canada will have to continue to pay some $1.8 million a year or more, for an idle privilege or the occasional use of a U. S. transmission line. It seems we can only eliminate these payments if the U. S. consents and you may expect the cost of this consent to be heavy.

The phraseology of Article X is exceedingly adroit. "Downstream benefits to which Canada is entitled" would seem to mean the amount before the surplus Canadian share of capacity is exchanged for energy, and this would add materially to the cost of the standy service to Canada.

I think probably the more important objective sought by the U. S. in this Article is as a deterrent to any Canadian claim being put forward for a share of increased downstream benefit capacity when the U. S. requirement for regulation of flow changes from firm power to peaking or the equivalent. In the light of this consideration, I expect that Article X, if it remains in the Treaty, will make it very difficult to obtain, subsequently, an inter-connection agreement which will be free of serious adverse effect on Canadian interests.

Therefore, I think it important that the anxieties expressed by Montreal Engineering as well as by myself should result in a prompt rejection of Article X.

2. In a footnote on Page 24 and re-emphasized on Page 25, Montreal Engineering asserts that the criteria of operation of the Canadian storages prescribed in Annex A Para (7) will result in Canadian output less than might otherwise be obtained and points out that no study has yet been made to determine the net result. Here is a report commissioned by the Government of Canada and you have been warned that no study has yet been made to determine the net result of the operation of Mica for system benefits when this plant is machined. I pose this question! How do you justify the repeated assurances that have been made that Canada's interests will be adequately protected by this Treaty?

I have pointed out repeatedly the very serious danger to Canada in this situation and in this connection I would refer you particularly to my address to the Engineering Institute of Canada in Montreal on 15 June 1962. I will refer to this further in my comment on your Para 8.

3. On Pages 2, 19, and 25, Montreal Engineering refers to the declining downstream benefits to firm power (note that the arrangement does not provide the half share of the gain in the United States which was specified in the IJC Principles). I recall also that the Treaty gives no specific assurance as to the amount or the continuance of these benefits.

I have already expressed both directly and indirectly my own criticism on the afore-mentioned three points and I refer you to my CI of IA article and to my statement to the EIC on 13 June 1963 and published by the Institute in Criticism of the paper by Mr. McMordie, General Manager of the B. C. Power Commission.

In regard to your Para 5, may I recall again that not even one of the reports mentioned in your earlier paragraphs which I have seen, contains any comparison between the Treaty projects and the Dorr Plan (Seq IXa), and the same is true for the Montreal Engineering Report of May 1961, which you do Not mention. As to the Gibb and Merz and McLellan Report, to which you refer later, this report is specifically confined to the Treaty projects by the terms of reference. These projects are as developed in the Copper Creek plan in the ICREB Report.

I am aware also that engineers in the Department of NA and NR have opposed the Dorr plan and that they have resisted warnings given by Montreal Engineering. They have even complained to Montreal Engineering "that the views of technical advisers during the negotiations are not supported in your report".

As regards the last sentence of your Para 5, may I say I do recall the opinion you attribute to me as having been expressed to the External Affairs Committee in respect to the rejection of Libby. The government to which I referred as responsible was the Government of Canada.

In your Para 6, you refer to the question of "Canada's ability to control the operation of the Treaty storages in a way which will safeguard generation in Canada"; also to Montreal Engineering, Caseco Consultants, and Gibb and Merz and McLellan, as supporting the Treaty in this respect.

The actual wording of the Montreal Engineering report in this connection is, "The estimated annual generation has been assumed to be fully usable to meet power requirements in B. C. It is thought that the provisions contained in the Treaty for changing the operation of the Mica Creek storage after the installation of at-site generating facilities, and the availability of the Arrow Lakes reservoir for release ahead of Mica, warrant this assumption. Studies should be made to confirm this assumption at the first opportunity." This report clearly expresses anxiety on the matter.

I have never seen the Caseco Report but I have understood that it too had been directed by order of the B.C. Government to the Treaty projects. I will comment on the opinion expressed in the Gibb Report in my reply to your Para 8.

In regard to your Para 8, in the quotation please note the words "except for three months". As was pointed out in the IJC Principles report, in Canada we will be concerned for a very long time into the future to use our own hydro-electric resources to supply firm power to our loads.

Firm power is power which is completely assured and the amount which can be contracted to be sold is fixed by the minimum dependable generation in a representative critical period of low flows. Please see the definition of prime power in Appendix 4 of the Gibb Report which is a fair statement. The dire effect of the Treaty is increased by the exception which Gibb has stated will apply during three months.

Under Annex A, Para (7), Regulation for optimum system benefits, this effect has been stated by the Chairman, B. C. Power Commission (Keenleyside) to result in a decrease in average annual production suitable for the Canadian load from Mica (including I think Downey and Revelstoke Canyon) from "1,000 MW to 100 or 200 MW".

This information was given under oath but it may seem extravagant. However for comparison I would mention that the effect produced at Waneta by U. S. control of the storage upstream on the Pend d'Oreille for refill of Hungry Horse is a reduction in capacity during the late summer from 4 units to 1 unit, that is, a reduction by 75% in the amount of firm power deliverable to the Canadian load.

In regard to your Para 9, I note the extract from Page 4, Para 3 of the Gibb Company's letter of transmittal.

By Annex A, Para (7) of the Treaty, the Canadian storages are to be operated "to achieve optimum power generation at site in Canada and downstream in Canada and the United States". This applies to all the Canadian storages provided in the Treaty and there is no exception to permit Mica to be operated one way for Canadian benefits and High Arrow in another for U. S. benefits, unless, under Para (8), Canada makes up the total deficienty to the United States. This may be large because of the fundamental difference in national purpose when thermal comes to predominate in the U. S. system.

I am surprised that the Gibb Company in their covering letter have not mentioned this defect in the Treaty, but I observe, in re-reading their report, that many unresolved doubts have been expressed and more particularly that they have not insisted that detailed studies on

regulation be carried out. This means that the great benefits attributable to Seq IXa have not, it appears, come within their opportunity for consideration.

Re your Para 10. Please let me assure you that I do differ from your interpretation of these reports on the points I have noted. I think the foregoing explanations of the meaning of Annex A Para (7) and (8), and the statements of Keenlyside and Montreal Engineering, and the doubts expressed in the Gibb Report itself, should carry conviction that what I have stated is in fact correct.

Re your Para 12. Please let me assure you also that I do not stand alone in the views I have expressed. These have been checked in studies over many months with Canadian engineers and others who are highly qualified in hydro-electric thermal system operation and include on the basic points important experts in this field in the United States. I am prepared to support the views I have expressed in any competent forum and I am confident I will have wide support.

In any event, from reading your letter, it seems that I have aroused your doubts about the Treaty and this is heartening because these matters are so supremely important to Canada that I do think the responsible government -- namely the Government of Canada -- should not rest until the technical aspects, legal and engineering, have been inquired into and reported upon by independent, fully qualified and responsible expert consultants in these respective fields and all doubt removed.

Accordingly I repeat the recommendation given to you in my letter of 22 August 1963.

Meanwhile, I do hope I have given you sufficient information for your expressed purpose to plug loop-holes in the present Treaty. May I say this line of thought on your part brings me a measure of encouragement, but I must add that merely plugging loop-holes is far short of the basic corrections to the Treaty which I regard as requisite.

Please be assured I will indeed be pleased to go into any other points you may have occasion to mention.

Yours very sincerely,

(Sgd.) A. G. L. McNaughton

OTTAWA, October 8, 1963

Dear General McNaughton,

Once again I am indebted to you for the time and effort you have given in providing me with your views on the Columbia River Treaty. Your letter of the 23rd of September commenting in detail on points I had previously raised concerning the Treaty is much appreciated. While I shall not attempt to reply in detail to your letter, you may be interested in some very general observations on the initial three points which were under consideration.

Your reference to a necessary expenditure of $710 million by the United States to provide flood control protection equivalent to that provided by the Treaty perhaps requires further investigation. My understanding was that this investment would provide not only equivalent flood control protection, but also equivalent power benefits. Furthermore, these domestic projects would provide a power benefit of continuing rather than diminishing value. The allocation of the $710 million was given as $140 million for flood control, $70 million for transmission and $500 million for power generation. If the whole cost of $710 million is assessed against flood control, then surely we would have to say that the United States alternative plan would provide power benefits equivalent to those of the Treaty and at no cost. What complicates the picture further is that one of the projects making up the $710 million investment is under construction already and a further one is under study by Congress. The incremental cost to the United States of pursuing a unilateral plan would therefore appear to be rapidly diminishing.

As to approval of the Treaty projects, it is true that this government has the final say, in a negative sense, through the application of the International River Improvement Act. However, the action of refusing to approve a development proposed by a Province in relation to resources of which it is the constitutional owner is one that cannot be taken without good and adequate cause. As I pointed out in my last letter, there seems ample engineering evidence to support the selection of the present Treaty projects. The table on page 102 of the I.C.R.E.B. report indicates that the cost of the increment of energy gained by selecting a maximum diversion plan as opposed to a partial diversion exceeds in all cases the average system cost of energy. My reference to the report of Crippen Wright Engineering Ltd. also supports this conclusion. The "Summary of Findings" of their Interim Report No. 2, "Diversion of Kootenay River into Columbia River", contained the following statements:

"4. The dam for diverting the Kootenay should be located at either Canal Flats or Copper Creek.

"5. Two other possible sites for a diversion dam on the Kootenay River are situated near the confluence with the Bull River, one just above the confluence, the other just below. Schemes incorporating diversion dams at these alternative sites are found to be uneconomic in comparison with schemes dependent on a diversion dam at Canal Flats or Copper Creek, and they are not recommended."

General A. G. L. McNaughton
393 Fernbank Road
Rockcliffe Park
Ottawa, Ontario

While it is true that the Crippen Wright report did not study plans of development identical with those investigated by the I.C.R.E.B. report, the developed head on the Columbia River in most cases exceeded that considered in the I.C.R.E.B. studies and therefore would give an added incentive for the larger diversions. In spite of this fact the report favoured the more limited diversions.

I note that your letter refers to a Department of Agriculture report which you feel indicates that the maximum diversion plan would have a "beneficial effect" on agriculture in the East Kootenays. This one-page report is one of many papers that have been included in briefing documents prepared on the Treaty proposal. The report notes that among the 91,000 acres of land which would be flooded by the maximum diversion dam there are 24,000 acres which, if reclaimed, would be arable without irrigation, and 26,000 acres which have "some agricultural potential" and could support "low priced crops" if irrigation could be provided. The value of the crops obtainable would be so low that apparently irrigation would be impractical. The report then notes that there are 300,000 acres of land above the proposed reservoir level which, if irrigation could be provided, would be as potentially arable as the previously mentioned 26,000 acres. While it concludes that the agricultural potential of the area could be increased if irrigation water could be provided from the diversion reservoirs (just as it could if irrigation could be provided without the dams), the report makes no suggestion that irrigation water could in fact be economically provided to the high land after the construction of the dams. Whether or not the diversion dams would have a beneficial effect would seemingly depend upon the practicability of irrigating the increased potential acreage.

Finally, dealing with the third point under consideration, that of Canadian control over the Treaty projects, my letter of the 10th of September did not refer to the 1961 Report of the Montreal Engineering Company because that report did not involve a study of possible conflicts in operation under the Treaty but was requested solely as a means of double checking on the accuracy of the many calculations carried out during the negotiation of the Treaty. The report involved slightly more than two months of concentrated effort on the part of the Company.

In answer to your question as to how I can justify the repeated assurances of adequate protection for Canada, my reply is that further studies were carried out by the Montreal Engineering Company during the fall and winter of 1961 and these studies provided very strong support for not only the Treaty provisions for Canadian operation, but also for the High Arrow dam.

I am sure that your views on the Treaty plan are based upon a sincere conviction that the plan is contrary to the best interests of Canada. I am equally sure that the opinions which have been expressed by officials of the Department of Northern Affairs and National Resources have been motivated by sincere doubts as to the economic feasibility of your maximum diversion plan. These engineering officials did not "resist" warnings of the Montreal Engineering Company, but I understand that, on the contrary, they were instrumental in having that Company requested to investigate the problems of operation under the Treaty. I am certain that the further request to that Company for an explanation of one portion of their 1961 report was not a "complaint", but rather was an attempt by the officials to fully investigate what might have been a serious but perhaps unavoidable fault in the Treaty. I am firmly convinced that the actions of the Government's engineers have had the best interests of Canada in mind.

I realize that this has been a very brief discussion of your three major points of criticism. I assure you, however, that your detailed comments will be given the fullest study and wherever weaknesses appear in the present Treaty every effort will be made to correct them.

I am attaching for your information a recent comparison of benefit-cost ratios for High Arrow and Mica storages as well as a Water Resources Branch paper on diversions of water for consumptive use. You will remember that these two items were requested during our meetings this past summer. I am sure you will find them of interest.

Thank you again for your letter.

Yours sincerely,

Paul Martin

BENEFIT-COST STUDIES

SEP - 1963

ASSUMPTIONS

(1) In studies excluding the High Arrow project, the conflict which would exist in operating Mica for at-site power and downstream benefits has been ignored.

(2) It has been assumed that all the project positions studied would be acceptable to the three governments concerned.

(3) West Kootenay benefits are not considered.

(4) Downstream benefits are sold within the United States at 2.5 mills per kwh and $8.00 per kw (Canadian funds).

(5) Mica at-site generation is transmitted to Vancouver for sale.

(6) Value of power at Vancouver at 345 kv terminals is 3.0 mills per kwh and $8.20 per kw (4.6 mills per kwh at 60% load factor).

(7) No reduction in benefits due to time lost in possible renegotiation.

(8) Mica storage commitment to Treaty operation is limited to 7.0 million ac-ft. (Consistent with average at-site use).

(9) Most recent project cost estimates were adopted.

Study No.	Projects	Credit Position	Benefit-Cost Ratio
1 (a)	High Arrow	1st ADDED To U.S. Base System	1.8
(b)	High Arrow	2nd ADDED To Duncan Lake	1.6
2 (a)	Mica Storage Only	1st ADDED To U.S. Base System	1.1
(b)	Mica Storage Only	2nd ADDED After Duncan	1.0
(c)	Mica Storage Only	2nd ADDED After Duncan & Bruces Eddy	0.9
(d)	Mica Storage Only	2nd ADDED After Duncan, Bruces Eddy and High Mountain Sheep	0.8
(e)	Mica Storage Only	2nd ADDED After Duncan, Bruces Eddy, High Mtn. Sheep & Knowles	0.6
3 (a)	Mica Storage + Generation	1st ADDED To U.S. Base System	1.2
(b)	Mica Storage + Generation	2nd ADDED After Duncan	1.1
(c)	Mica Storage + Generation	2nd ADDED After Duncan & Bruces Eddy	1.1
(d)	Mica Storage + Generation	2nd ADDED After Duncan, Bruces Eddy & High Mountain Sheep	1.0
(e)	Mica Storage + Generation	2nd ADDED After Duncan, Bruces Eddy High Mtn. Sheep & Knowles	0.9

[illegible]

ASSUMPTIONS

(1) In studies excluding the High Arrow project, the conflict which would exist in operating Mica for [illegible] upstream and downstream benefits has been ignored.

(2) It has been assumed that all the project positions studied would be acceptable to the [illegible] government concerned.

(3) West Kootenay benefits are not considered.

(4) Downstream benefits are evaluated in U.S. and United States at 2.5 mills per kwh and $7.00 per kw (capacity) [illegible].

(5) Mica [illegible] to [illegible] Vancouver for sale.

(6) Value of power at Vancouver [illegible] 3.0 mills per kwh and $8.50 per kw [illegible] (at [illegible] load factor).

(7) No reduction in [illegible] due to [illegible] in possible [illegible].

(8) Mica storage [illegible] limited to 7.0 million ac-ft. [illegible] consistent with [illegible].

(9) [illegible] adopted.

Study No.	Project	[illegible] Position	Benefit-Cost Ratio
1 (a)	High Arrow	[illegible] U.S. Base System	[illegible]
(b)	High Arrow	[illegible] Duncan Lake	1.6
2 (a)	Mica Storage Only	[illegible] U.S. Base System	[illegible]
(b)	Mica Storage Only	[illegible] After Duncan	1.0
(c)	Mica Storage Only	[illegible] After Duncan & Bruces	[illegible]
(d)	Mica Storage Only	[illegible] After Libby, Duncan [illegible] and High Mountain Sheep	0.0
(e)	Mica Storage Only	[illegible] Kootenay, Bruces [illegible] High Mountain Sheep & Knowles	0.6
3 (a)	Mica Storage & Generation	1st Added to U.S. Base System	[illegible]
(b)	Mica Storage & Generation	2nd Added After Duncan	1.1
(c)	Mica Storage & Generation	[illegible] After Duncan & Bruces & Libby	1.1
(d)	Mica Storage & Generation	[illegible] Duncan, Bruces, Libby [illegible] Mountain Sheep	1.0
(e)	Mica Storage & Generation	[illegible] Duncan, Bruces, Libby, [illegible] Sheep, Knowles	0.9

DIVERSIONS OF WATER FOR IRRIGATION AND

OTHER CONSUMPTIVE USES

COLUMBIA RIVER BASIN

Water Resources Branch

August 1963

DIVERSIONS OF WATER FOR IRRIGATION AND OTHER CONSUMPTIVE USES

COLUMBIA RIVER BASIN

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DIVERSIONS OF WATER FOR IRRIGATION AND OTHER CONSUMPTIVE USES

COLUMBIA RIVER BASIN

I. Schemes for Diversion of Water Out of the Columbia River Basin

Article XIII(1) of the proposed Columbia River Treaty does not prevent diversions out of the Columbia River Basin for consumptive purposes. Such diversions for irrigation purposes have been a subject of several preliminary studies. Diversions from the Columbia or Kootenay Rivers would affect existing and potential water-use developments in the Columbia River Basin.

The purpose of this paper is to provide a brief outline of the major diversion possibilities that have been studied. It should be noted at the outset, that few of the diversion schemes have been studied in depth, and much additional examination would be required before feasibility of the schemes could be established. The studies, however, have indicated that diversions from the Basin could be accomplished only through the construction of complex and costly storage and conveyance facilities. On the basis of the preliminary studies, the major diversion possibilities from the Columbia River Basin for consumptive purposes outside of the Basin have been found to be relatively unattractive under present-day conditions. The usefulness of these diversion possibilities as elements of long-range water-use planning, however, cannot be discounted entirely because economic conditions are ever changing.

1. Diversions from the Columbia and Kootenay Rivers in Canada to the Saskatchewan River Basin in the Prairie Provinces

A reconnaissance study was carried out for the Saskatchewan Power Corporation by Crippen Wright Engineering Ltd. to assess the possibilities of augmenting the water supply of the Saskatchewan River system by diversions from outside the basin. The study was initiated on the premise that present river flows will be considerably depleted in the future by irrigation, municipal, and industrial requirements.

Although no long-range forecasts of consumptive uses in the Prairie Provinces are available, it has been suggested

DIVERSIONS OF WATER FOR IRRIGATION AND OTHER CONSUMPTIVE USES

COLUMBIA RIVER BASIN

1. Summary of Diversions [illegible] of the Columbia River Basin

[illegible] of the proposed Columbia River Treaty [illegible] diversions [illegible] of the Columbia River Basin for consumptive purposes [illegible] for irrigation purposes have been [illegible]. Diversions from the Columbia [illegible] would affect existing and potential [illegible] within the Columbia River Basin.

The purpose of [illegible] is to provide a brief outline of the major diversion [illegible] that have been studied. It should be [illegible] that [illegible] of the diversion schemes have been [illegible] and [illegible] examination would be required before [illegible] of [illegible] schemes could be established. The studies, however, have indicated that diversions from the [illegible] could be accomplished only through the construction of [illegible] and [illegible] facilities. On the basis of the preliminary studies, the major diversion possibilities from the Columbia River Basin for consumptive purposes outside of the basin have been found to be [illegible] unattractive under present day conditions. [illegible] of these diversion possibilities [illegible] planning, however, cannot be discounted [illegible] conditions are ever changing.

2. Diversions from the Columbia and Kootenay Rivers in Canada to the Saskatchewan River Basin in the Prairie Province

[illegible] study was carried out for the Saskatchewan [illegible] Board [illegible] to assess the possibilities of augmenting the water supply of the Saskatchewan River [illegible] diversions from outside the [illegible]. The [illegible] on the premise that present [illegible] will be [illegible] completely [illegible] in the future by [illegible] and industrial requirements.

Although [illegible] consumptive uses in the [illegible] that [illegible]

that the population of the three Prairie Provinces will eventually reach 100 million people; requiring 50,000 cfs of water for consumptive purposes. It is interesting to note that on the basis of population growth of 2.2% per annum experienced during the past 10 years in the Prairie Provinces, it would require a further period of 158 years for the three Prairie Provinces to reach a total population of 100 million people.

The Crippen Wright report of March 1962 suggested a programme that might start with the diversion of the upper North Saskatchewan River into the South Saskatchewan River. This would be followed by diversion from the Athabaska River into the North Saskatchewan River where the water could be utilized along the North Saskatchewan itself, or could be diverted, in turn, for use in the South Saskatchewan system. The next stage of the programme envisaged diversion from the Peace River into the Athabaska River for further diversions to the South Saskatchewan River system. In the late stages of the programme, small diversions could be made from the Fraser River system. At an ultimate stage of the diversion programme, the more expensive diversion possibilities from the Columbia River Basin might be developed.

Seven possible routes for diversion from the Columbia River Basin to the Prairies were outlined in the Crippen Wright report. These possibilities are described briefly below. The diversion schemes and their associated costs were based only on paper location with very little first hand knowledge of terrain or soil conditions.

Two basic assumptions were made in deriving cost estimates:

(i) the destination of the diverted water was considered to be the South Saskatchewan River system where water could be released to large tracts of irrigable land.

.... 3

(ii) diversion projects of the magnitude suggested in the report would not be considered in a period of high interest rate or without special financing arrangements; consequently, annual costs for the studies were computed on the basis of 3-1/2% interest rate with a 60-year amortization period.

(a) Diversions from Mica Reservoir into the Athabaska River

Three alternative schemes were studied for diversion from the proposed Mica reservoir on the Columbia River into the Athabaska River. Estimates of costs were made for a diversion of 4,350,000 acre-feet of water annually. The estimates included the cost of pumping and diversion works through the Rocky Mountains to the Athabaska system. They also included the increment of cost required to transfer this additional water from the Athabaska system to the South Saskatchewan River. The cost estimates, however, did not include any portion of the cost of Mica dam and reservoir, nor did it provide any compensation for losses that would be incurred in the Columbia River Basin as a result of such diversion.(1)

Of the three alternative schemes, the annual unit-cost of the lowest cost scheme was estimated to be in the order of $7.50 per acre-foot of diverted water delivered to the South Saskatchewan system.

(b) Diversions from Surprise Rapids Reservoir to North Saskatchewan River

Consideration was given to a scheme for diversion from a reservoir on the Columbia River above Surprise Rapids into the North Saskatchewan River system. Estimates of costs were made for a diversion of 4,350,000 acre-feet of water annually; and included the costs of

(1) At 3 mills/kwh, the loss in energy generation alone at existing and potential main stem plants on the Columbia River in Canada and the United States would amount to about $5.50 per year for every acre-foot of water diverted. Of the $5.50, $2.40 would be lost in Canada and $3.10 in the U.S.

.... 4

Surprise Rapids Reservoir, pumping and associated diversion works through the Rocky Mountains, and transferring of water from the North Saskatchewan River system to the South Saskatchewan River system.

The annual unit cost was estimated to be $10.50 per acre-foot of diverted water delivered to the South Saskatchewan system. The cost estimates did not provide any compensation for adverse effects on Columbia River Basin developments. (See footnote at bottom of page 3.)

(c) Diversions from the Upper Columbia-Kootenay Reaches into the South Saskatchewan River

Three alternative schemes were studied for the diversion of water from the Columbia River basin directly into the South Saskatchewan system. Two of these schemes would involve diversions from reservoirs on the upper reach of the Columbia River with water supplemented by diversion from the Kootenay River. In both schemes, the water would be delivered into Bow River, a tributary of the South Saskatchewan River. The third scheme would involve diversion from the Kootenay and Elk Rivers through the Rocky Mountains into Oldman River, a tributary of the South Saskatchewan River.

Diversions under these three schemes have the advantage of directly reaching the South Saskatchewan system without the need of subsequent re-routing of flows from either or both the Athabaska and North Saskatchewan Rivers.

Of the three alternative schemes, diversions from the Kootenay and Elk Rivers were found to yield the lowest annual unit cost. For a diversion of 5,000,000 acre-feet of water annually, the annual unit cost was estimated to be $7.60 per acre-foot. The cost estimates did not

[illegible] [illegible] (Appendix [illegible]), pumping and associated diversion works [illegible] [illegible]. [illegible] the [illegible] of [illegible] [illegible] North Saskatchewan River into the [illegible] [illegible] [illegible].

[illegible] [illegible] costs were estimated to be $40.50 per [illegible] [illegible] [illegible] water delivered to the South Saskatchewan system. The cost estimates did not provide [illegible] [illegible] the adverse effects on Columbia River [illegible] [illegible] [illegible] [illegible] (Appendix B, [illegible] [illegible].)

(c) [illegible] [illegible] the upper Columbia River may be [illegible] into the South Saskatchewan River

[illegible] [illegible] alternative schemes were studied for the diversion of water from the Columbia River basin through into the South Saskatchewan system. Two of these schemes would involve [illegible] and [illegible] regulating on the upper reach of the Columbia River with water supplemented by diversion from the Kootenay River. In both schemes, the water would be delivered into the Bow River, a tributary of the South Saskatchewan River. The third scheme would [illegible] divert water from the Kootenay and Elk Rivers through the Rocky Mountains into the Oldman River, a tributary of the South Saskatchewan River.

[illegible] [illegible] [illegible] of these three schemes have the advantage of [illegible] [illegible] to the South Saskatchewan system [illegible] [illegible] [illegible] [illegible] [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] and [illegible] Saskatchewan Rivers [illegible] [illegible] [illegible] alternative schemes, diversion from the [illegible] and [illegible] were found to yield the lowest [illegible] [illegible] [illegible] [illegible] of [illegible] [illegible] acre-feet of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] to [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

provide any compensation for adverse effects on Columbia River Basin developments.[1]

(d) Diversions of Minor Tributaries

The studies for the Saskatchewan Power Corporation did not reveal any possibilities for economic gravity diversion of small tributary streams at high altitudes in the Columbia River Basin. A study by the Water Resources Branch indicated a possibility of diverting about 150,000 acre-feet annually from the Flathead River in B.C. to the Oldman River system in Alberta. On the basis of 3-1/2% interest rate and 60-year amortization period, the annual unit cost of the Flathead diversion would be in the order of \$4 to \$5 per acre-foot of diverted water.

A comparison of the costs of the various schemes as presented in the Crippen Wright report is tabulated below.

Annual Cost/Acre-Foot of Water Delivered
To South Saskatchewan System
(At 3-1/2% Interest)

Diversion Scheme	Total Diversion (Ac-Ft)	Annual Cost \$/Ac-Ft
North Saskatchewan	1,900,000	\$ 0.40
Athabaska	4,500,000	3.50
Peace River	14,500,000	4.60
Upper Fraser (Alt. #1)	1,087,000	6.00
Upper Fraser (Alt. #2)	4,350,000	8.30
Columbia River (Alt. #1) Mica Diversion	4,350,000	7.50[2]
Columbia River (Alt. #2) Surprise Diversion	4,350,000	10.50
Kootenay River	5,000,000	7.60

(1) At 3 mills/kwh, the loss in energy generation alone at existing and potential plants on the Kootenay and Columbia Rivers in Canada and the United States would amount to over \$5.00 per year for every acre-foot of water diverted.

(2) Mica Reservoir costs not included.

From the foregoing brief descriptions, it can be seen that the costs of diversions from the Columbia River Basin to the Prairies would be among the highest of the various alternatives. It would be of interest to note that some of the irrigation projects in Alberta have been developed in recent years at a capital cost of about $25 per acre-foot of storage including dam and main canal works. At 3-1/2% interest rate and 60-year amortization period, the annual cost would work out to substantially less than $2 per acre-foot. It is evident that diversions from the Columbia to the Prairies lie in the realm of economic possibility well in the future when all the available lower cost schemes have been developed.

2. Diversions from the Pend Oreille and Kootenai Rivers in the United States

(a) Pend Oreille Diversion to the Columbia Basin Irrigation Project

Several investigations dating back to 1903 have been carried out to study the possibilities of a gravity diversion from the Pend Oreille River for irrigation of over 1.5 million acres of arable land east of the Columbia River, in South Central Washington. The scheme consisted essentially of a diversion dam on the Pend Oreille River at Albeni Falls, together with a system of canals, tunnels, reservoirs, inverted siphons and a viaduct crossing Spokane River, to carry the water 130 miles from Albeni Falls to the bifurcation works at the head of the irrigable tract.

The gravity diversion scheme from the Pend Oreille River was abandoned in 1932 on recommendation of the Corps of Engineers in favour of a pumping scheme from the Grand Coulee reservoir to supply the necessary irrigation water.

(b) Pend Oreille Diversion to California

In a 1951 reconnaissance report of the Bureau of Reclamation, a scheme was outlined for a possible diversion of surplus water from the Pend Oreille to supply the needs of Northern California. Diversions from the Albeni Falls Reservoir on the Pend Oreille River "... could be carried by gravity flow to the Klamath River above the Ah Pah Reservoir. The total length of the aqueduct to the Klamath River* would be about 1,020 miles, of which about 290 miles would be tunnel and 40 miles in siphon. No estimates of cost were made for this plan because the necessary length of aqueduct causes it to appear unattractive, and also because tentative analysis of ultimate local water requirements indicate a lack of any substantial exportable surplus."

It might be well to point out that the Pend Oreille River downstream from Albeni Falls is now almost totally developed for hydro-electric power generation. A high degree of river regulation is also available from upstream storage; therefore, any diversions from the Pend Oreille would represent a material loss of power at downstream plants on both the Pend Oreille River and the main stem of the Columbia River. For energy alone at 3 mills per kwh, this loss would amount to $4 per year for every acre-foot of water diverted.

(c) Kootenai River Diversion to the States of Washington, Oregon and California

It would be in the realm of physical possibility to divert flow from the Kootenai River into the Albeni Falls reservoir on the Pend Oreille for further diversions to the States of Washington, Oregon and California. The

* The Klamath River rises on the Oregon-California border. Diverted water would have to be transported a further 300 miles to the San Francisco area and 600 miles to the Los Angeles area. The total length from Albeni Falls to Los Angeles would be approximately 1,600 miles.

.... 8

diversion could be accomplished by a high dam at a site on the Kootenai River below Troy, Montana, or by a gravity system of canals and tunnels from the proposed Libby reservoir. The water would be diverted over the Bull River-Lake Creek saddle.

No detailed studies or cost estimates have been made for such a plan. The economics of such a diversion would be highly questionable because of the expensive and long conveyance works associated with the scheme and similar power losses as those referred to under the Pend Oreille diversion plan.

Water from the Columbia River Basin cannot be transported in small quantities economically over a long distance. Any large scale diversion, however, would affect the power outputs at all existing and potential power developments downstream in Canada as well as the United States. In addition, with the high degree of regulation that would be available at the proposed Libby reservoir, and the possibility of Canadian diversions of the Kootenay River possible under the terms of the proposed Columbia River Treaty, it is doubtful that any large supply of surplus water would be available for export from the Kootenai River to other river basins in the United States.

II. Schemes for Diversion of Water Into The Columbia River Basin

1. Shuswap River Diversion to Okanagan Lake

It has been estimated that eventually there would be a deficiency of over 350,000 acre-feet of water to meet irrigation requirements in the Okanagan Basin. A very attractive scheme is available for obtaining supplemental irrigation water from the Shuswap River in the Fraser River basin. This scheme would consist partly of a small diversion structure on the Shuswap River near Enderly, B.C., and an excavated channel

across the Fortune Creek-Deep Creek saddle near Armstrong, B.C. Water would be diverted from Shuswap River through this channel to Okanagan Lake.

Storage would be available on Shuswap River at Mabel Lake if required. However, it would appear that flood flows of the Shuswap River would amply supply all diversion requirements. Okanagan Lake could provide the necessary storage and regulation of diverted flows.

2. Fraser River Diversion to Mica Reservoir

It has been suggested that possibilities might exist for diversion of upper Fraser and Thompson Rivers into the Columbia basin at the head of the Canoe River branch of the proposed Mica Reservoir. No detailed studies have been carried out to investigate these possibilities. It is highly doubtful that such diversions would yield sufficient benefits to offset the obviously high cost of development. Large dams would be required to back water across the drainage divide, and objections to flooding of the spawning grounds in the upper Fraser and Thompson Rivers could also be expected.

Water Resources Branch
August 1963

A. G. L. McNaughton

393 Fernbank Road
Rockcliffe Park
Ottawa Canada

October 31, 1963

The Hon. Paul Martin, P. C.,
Secretary of State for External Affairs, Canada
House of Commons,
Ottawa

Dear Mr. Martin:

I have your letter of 8 Oct 1963 in which you express certain general observations on some of the aspects of the proposed Columbia River Treaty which I had remarked upon in my letter to you of 23 Sept 1963.

In regard to your observations, I have now had an opportunity to look up the relevant reports which have been made public and which are available to me and I now make the following further comment.

For convenience of reference, I have numbered the paragraphs of your letter as follows:

Your Page 1: 1 and2
" " 2: 3, 4, 5, 6, and 7
(including Crippen Wright paragraphs)
" " 3: Para 7 (cont.), 8, and 9
" " 4: 10, 11, 12, and 13

Re your Para 2

I note that you agree on $710 million as the total amount which the U. S. estimates would need to be expended to obtain, among other advantages, the same degree of flood control as could be given by the three Canadian storages, Mica, High Arrow, and Duncan. It seems to me that where we differ is that you accept the position that the sum which has been allocated by the U. S. to flood control is a measure of the Canadian contribution. This is not my view because the U. S. in multi-purpose projects follow a principle that relieves the public of charges for flood control, which can be imposed on power with greater convenience and less public opposition.

The result is that the actual flood control benefit from the operation of the treaty storages is very much more than double the $64.4 million present worth figure evolved by the negotiators.

May I repeat again that it is my firm conviction that the revised treaty or protocol should provide specifically for a payment to Canada equal to half the damages prevented by the operation of Canadian storage (IJC Principle) and that the formulae for arriving at this amount should be open to re-negotiation on demand as future experience may indicate. There must also be a minimum payment per acre foot of storage space in order to prevent abuse by the U. S. of the privilege of calling for drawdown to take care of impending floods of exceptional great magnitude which are forecast.

October 7, 1964

[illegible] Paul Martin,
[illegible] Affairs, Ottawa, Canada.
[illegible]
Ottawa

Dear Mr. Martin:

I [illegible] in which you [illegible] certain aspects [illegible] on some of the aspects of the proposed Columbia River Treaty which I [illegible] upon in my letter to you of [illegible] 1964.

[illegible] I have now [illegible] up the relevant reports which have been made public and which are available to me and I add only the following further comment.

For convenience of reference I have numbered the paragraphs of your letter as follows:

Your Page No. 1 and 2
[illegible] 3, [illegible]
[illegible] paragraphs
Part 7 [illegible] and 9
[illegible] 10, 11, [illegible] and 12

[illegible]

I note that you [illegible] \$[illegible] million as the total amount which the U.S. [illegible] would [illegible] be [illegible] to obtain, [illegible] other advantages the [illegible] of flood control as could be given by the [illegible] Canadian [illegible], Libby [illegible], [illegible] as we differ [illegible] the cost of the dam which [illegible] flood control [illegible]. This [illegible] because [illegible] multi-purpose [illegible] that [illegible] the [illegible] for flood control [illegible] compared with [illegible] and [illegible] public [illegible].

[illegible] flood control benefit [illegible] of the Treaty provides [illegible] the \$64.4 million [illegible] evolved by the negotiators.

[illegible] my firm conviction that [illegible] should provide [illegible] to Canada equal to half the [illegible] of Canadian storage [illegible] that the formula for arriving at this amount should be open to re-negotiation [illegible] future experience may indicate. [illegible] per acre foot [illegible] by the U.S. of the privilege [illegible] Canadian [illegible] great

References to other points in regard to flood control relating to clauses in the treaty of doubtful or unacceptable intent are included in my letter to you of 23 Sept 63 and in my CI of IA paper for their Spring, 1963, Journal, all of which, I submit, require the closest consideration.

Re your Para 3

I am very pleased to learn that you agree, even if only in a negative sense, that the ultimate authority for determination of projects in Canada on "International Rivers" rests with the Federal Government of Canada. This relieves some of the grave anxiety I have felt since I became aware of the terms of the agreement which you entered into with the Government of B. C. under date of 8 July 1963. I do hope you and your colleagues in the Government of Canada will be persuaded to take the next step and forbid or "decline assent" to projects which do not implement the principles of proper economic selection, and particularly those which sacrifice, or even seem to compromise, the sovereign right of Canada to control our own waters within our own territories.

Re your Para 3 and your reference to the table (in Para 243) on Page 102 of the ICREB Report of March 1959, which you indicate represents "The average system cost of energy", may I caution that these figures were compiled in a study directed to the selection of the best physical array of projects without regard to the boundary, as agreed by the ICREB at its first meeting in 1944 when this was established as a principle. The interest rate used was 3%, which is about the weighted mean of the actual rates of 2½ and 5% which has been indicated for Canada and the U. S. respectively.

In consequence, while the total international costs given in the table on Page 101 (Para 242) are within the limits of reasonably acceptable error, those allocated nationally in Para 243 are slightly high for the U. S. but between 40% and 50% too low for Canada.

Moreover, in this calculation, the downstream benefits of upstream storage continue to be included in the U. S. figures, that is, where generated. So the upstream state, Canada, receives no credit for the large benefits created by Canadian reservoirs. In regard to flood control, these mostly arise from the Canadian storages and are omitted entirely in the ICREB figures, perhaps, I venture to say, as part of the U. S. endeavour to minimize the very large benefits rightly attributable to this source. In the result, the statement in Para 242, in the conditions stated, is qualitatively correct (except in regard to flood control), namely that the Dorr diversion plan produces the lowest cost incremental power, that is the highest system benefits to power. However, these incremental costs differ only slightly in the other plans.

In contrast, in Para 243, the figures for power benefits and power costs assigned to Canada are both much too low and there is no assurance that the ratio has any real meaning at all.

The great advantage to Canada of the Dorr plan is that the waters originating in the East Kootenay are conserved in Canadian storages and remain under the sovereign jurisdiction and control of Canada, whereas both the other plans include Libby in Montana and by the treaty, the physical and jurisdictional control of this storage in Libby and its refill are to be exercised by the U. S.

without restriction. Canada thus lacks an assured plan on which to base firm power output at the West Kootenay plants or to give flexibility as would be provided by Dorr-Bull River-Luxor in the operation of the great plants at Mica, Downie, Revelstoke Canyon, and Murphy.

Moreover, under the proposed treaty, with the East Kootenay supply reservoired in the U. S., the U. S. at any time, in any amount, is free to divert these flows probably by way of Bull Lake to the Grand Coulee reservoir for onward delivery to California for consumptive agricultural purposes. I submit that it is a real responsibility of the Government of Canada to prevent such a disaster to Canadian interests.

Subsequently, this best international plan developed by the ICREB has been studied by the IJC in its national aspects in regard to interest rates and in regard to the principles which should be adopted for the equitable sharing of the immense benefits which the U. S. will receive from the operation of the Canadian storage to power and flood control. I believe that these subsequent studies have confirmed the superior merit of ICREB plan Sequence IXa in all aspects.

Re your Para 3 (cont.) and also Paras 4 and 5, quoted from Crippen Wright interim report No. 2.

Since this report is labelled interim and is No. 2 in that series, I would think it is among those which were received in the summer of 1959 and, as stated in my letter to you of 23 Sept 1963, found not to justify modifications in the ICREB Report of March 1959. Certainly I would not be prepared to subscribe to these generalizations until the reasons for the conclusions advanced have been received and considered and this I will be glad to do if a copy of the full report can be provided. However I would think it evident that this report was made before the recent studies on High Arrow in which the investment cost has been increased from the ICREB preliminary figure of $66.4 million to $124.0 million, with probably further increases to come. In consequence of this, it would seem that the basis of the statements attributed to Crippen-Wright have been out-moded.

On engineering problems as complex as those we have under study it is manifestly wrong to base conclusions and discussion on summarized statements of opinion taken out of the context of the reports without a full understanding of the bases and parameters of the reports in question.

Re Your Para 6

The developed and average heads on the Columbia in the Copper Creek and Dorr plans are stated or estimated as follows:

	Gross Head	Estimated Average	Diversion (MAF)
Copper Creek Seq. VIII	1299 ft	1143 ft	2.6
Dorr Seq. IXa	1279 ft	1165 ft	5.8
Difference Dorr increase	-20 ft	+22 ft	

It is understood that the Crippen-Wright proposals were analogous to Seq VIII with 1.5 maf in place of 2.6 maf. Thus in these proposals, the average head at Mica would be less well maintained for a given discharge.

I would observe further that the average annual release from storage at Mica is 3.93 maf while under the treaty, if the average annual release may be 7.0 maf, this would nearly double that contemplated in the ICREB report. If so, the average head at Mica in Seq VIII under the treaty will be much less than I have indicated above.

Re your Para 7

In regard to irrigation in the East Kootenays, the Department of Agriculture report states that some 300,000 acres of irrigable land could be substituted for 26,000 acres of bottom land of no better quality which would be submerged by the reservoir. In Sequence IXa these new lands are adjacent to the reservoirs, which will be high in the early summer and thus facilitate local pumping.

The report in question was obtained by the then Minister of Agriculture at my request, and at the time I had the opportunity to discuss the proposal with the technical officers concerned in the Department of Agriculture and in P.F.R.A., and I am assured that the project has merit. I believe that this would be confirmed by competent engineering consultants if the matter is referred for advice before committments are made to the ratification of the treaty or the protocol.

Re your Paras 8 and 9

Re your reference to further studies by Montreal Engineering Company during the fall and winter of 1961, which you say give strong support to the treaty projects, I have not had access to these studies. I would be pleased to have an opportunity to study these reports.

Re your Paras 10 and 11

In Para 10, why unavoidable?

I appreciate your recognition that the views I have expressed are based on conviction. These views are derived from long study over many years and I believe that what I have been stating is correct. I certainly have endeavoured to be entirely objective in my presentations of the deficiencies which I am convinced exist in the present proposed treaty. I express the very sincere hope that you will be able to correct these matters or in cases of doubt that these will be resolved and Canadian rights not left open to dispute.

I can assure you that the results you obtain will be examined with the closest and most sympathetic attention to the best interests of Canada, which I am sure is your intention also, even if we may differ in the method to be adopted.

I am obliged to you for:

(a) The paper giving revised Benefit/Cost storage studies in various combinations, dated Sept, 1963

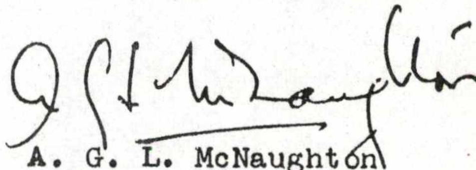
(b) The NA and NR paper on possible diversions from the Columbia to the Eastern slope of the

Rockies. All these have long been known to the IJC, but it is very convenient to have them listed with available data.

In this connection, I hope you have a copy of the paper on "Energy and Water", presented at Calgary on 9 Oct 1963 by the General Manager of the Saskatchewan Power Corp. This paper is based on engineering studies carried out by Crippen-Wright consultants and I believe the data would command confidence.

I mention the plans for the use of Kootenay and Columbia water particularly because these are complementary to the Seq IXa plan with which I have concerned myself. I hope these forecasts and studies will help in establishing the conviction that the construction of the East Kootenay storages and the consequent elimination of Libby are <u>essential</u> Canadian interests.

Yours very sincerely,



A. G. L. McNaughton

Ottawa, Ontario,
November 21, 1963.

General A. G. L. McNaughton,
393 Fernbank Road,
Rockcliffe Park,
Ottawa, Ontario.

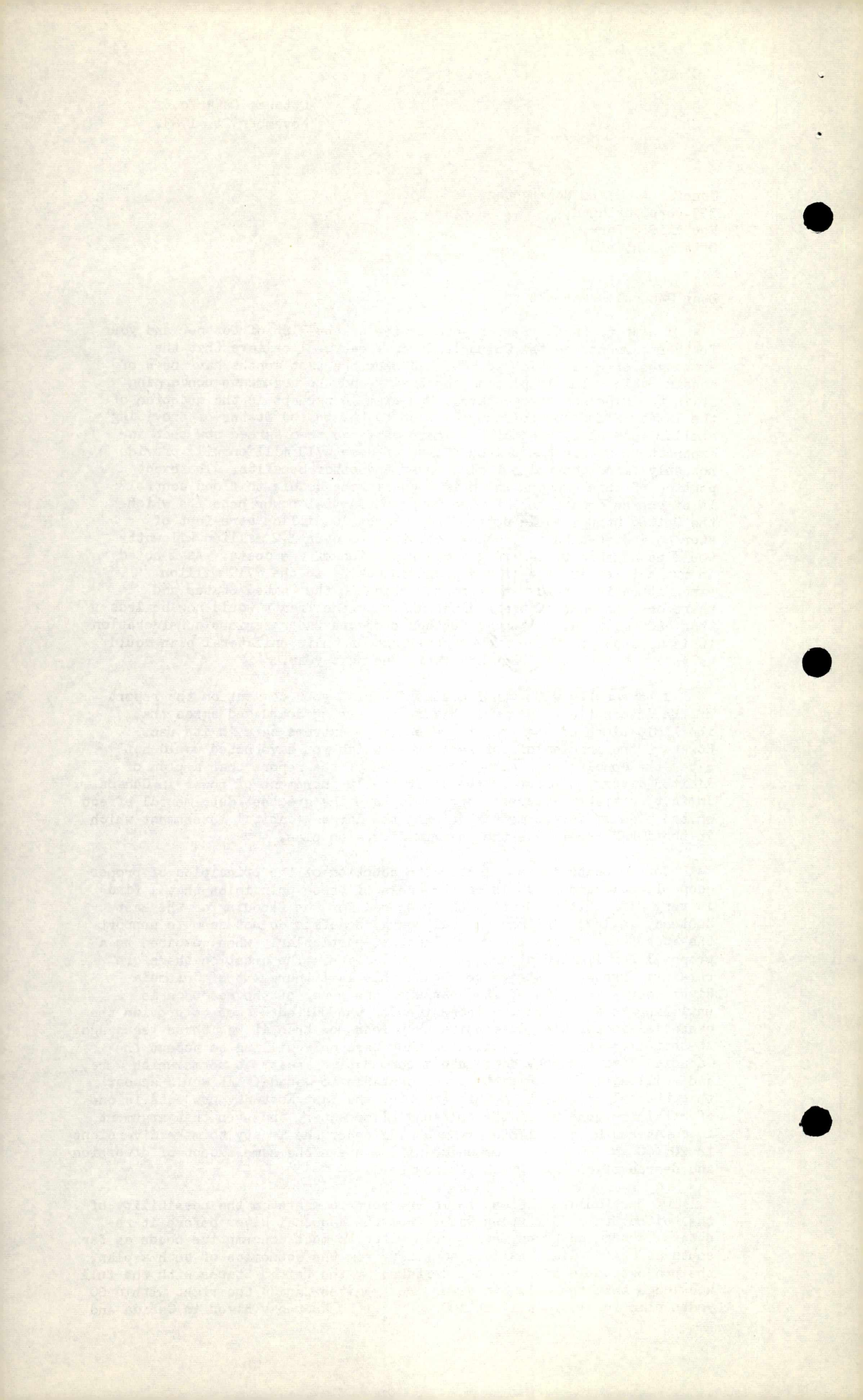
Dear General McNaughton:

I wish to thank you for your letter of the 31st of October and your further comments on the Columbia River Treaty. I believe that the exchanges of views which we have had over the past months have been of considerable value in placing the Treaty and the arguments concerning it in their proper perspective. One example perhaps is the question of the Treaty flood control and the cost to the United States of providing similar control by projects of their own. We seem agreed now that an expenditure within the United States of some $710 million will provide not only flood control but also power and other benefits. The exact portion of this expense which is properly chargeable to flood control is of course debatable, but the very substantial power benefits which the United States would obtain from almost 10 million acre-feet of storage and at-site generating potential of over 1.2 million kilowatts would be capable of carrying a major portion of the costs. As I noted in my last letter, one of the projects making up the $710 million expenditure is already under construction in the United States and therefore the cost of their alternative to the Treaty would now be less than $600 million. With two further projects under serious consideration it is apparent that the incremental cost of their unilateral plan could be very substantially reduced within the next year.

I have noted with considerable interest your comment on the report of the International Columbia River Engineering Board and agree that the limitations of that report necessitate extreme care in its use. However, the problem of interest rates which you have noted would not alter the conclusion reached on page 102 of the report that a plan of limited diversion produces the least costly increment of power in Canada. In fact, a higher interest rate would have the greatest detrimental effect on the plan of development requiring the largest capital investment which in the ICREB report was the maximum diversion plan.

You advocate in your letter the adoption of the principles of proper economic selection. It is on the basis of these principles that I find it very difficult to justify the proposal for the flooding of the East Kootenay Valley. The incremental energy benefits do not seem to support the acceptance of the incremental costs, particularly when compared to a proposal for limited diversion at Canal Flats. The question therefore remains: are we to strive to obtain this last increment of Columbia River energy in spite of its cost when the owner of the resource is unwilling to do so and the incentive for the United States to provide the essential cooperation is considerably less now than it was three years ago? At that time the record indicates they were only willing to accept the Canadian East Kootenay dams into a cooperative Treaty at terms which were, and still would be, completely unacceptable to Canada. It would appear that the only argument at this time for the East Kootenay projects is one of retaining control of the Kootenay River water, and even that argument is countered by the rights given Canada under the Treaty to make diversions in 20, 60 and 80 years time which will achieve the same extent of diversion and degree of control which you now seek.

Of particular interest to me are your comments on the possibility of the United States diverting water from the Kootenai River before it re-enters Canada and transporting this water to meet consumptive needs as far south as California. Aside altogether from the economics of such a plan, the project would have to be undertaken by the United States with the full knowledge that the Columbia River Treaty gives Canada the right within 80 years time to divert all but 1000 cfs of the Kootenay River in Canada and



with no Treaty provision for any liability for damage incurred downstream in the United States. Very little water would be left in the River to supply the suggested United States diversion works.

Also with regard to United States diversions out of the Kootenay River, I must assume that these diversions would be undertaken for consumptive uses, as the Columbia Treaty expressly forbids diversions for power purposes by either country with of course the one exception of phased Kootenay River diversions by Canada. If as you suggest the United States is free to make consumptive diversions at any time and in any amount, I conclude that you agree that the Columbia River Treaty does not prevent consumptive diversions by either country and that Canada would, therefore, be free to make substantial diversions eastward to the Prairie Provinces for such purposes.

Perhaps one final point upon which I would appreciate clarification is your reference to studies by the International Joint Commission of the proposals of the I.C.R.E.B. I am aware of course of the I.J.C. Principles, but was unaware of any other Commission report to the Government. If you could provide me with the particulars of that report and whether or not it preceded or was superseded by the Commission's report on Principles, I would have a better appreciation of the importance which you place on it.

The quotations from the Crippen-Wright Engineering report which I included in my letter of October 8th can be found in both the final report by that consulting firm as well as their Interim Report No. 2. While a spare set of their complete report is not available, I am forwarding for your information a copy of the interim report dealing with Kootenay River diversions. With the exception of minor editorial changes the "Summary of Findings and Recommendations" of the interim report is repeated in the final report. As the interim report deals only with the economics of diversion proposals and does not consider the advantages or disadvantages of an Arrow Lakes dam, the recent increase in the cost of that structure should not alter their conclusions in any way. However, increased investment in recent years in the Upper Columbia and East Kootenay valleys, particularly in the vicinity of Windermere Lake, would tend to strengthen the arguments for limited diversion. I would appreciate the return of the Crippen-Wright report at your convenience.

I am also attaching at your request letters from the Montreal Engineering Company which report on their investigations of the freedom of operation for at-site power generation in Canada under the terms of the Treaty. I believe you will find their conclusions quite interesting.

Thank you once again for your comments.

Yours sincerely,

(Sgd.) Paul Martin

Paul Martin.

Encls.

A. G. L. McNAUGHTON OTTAWA, CANADA.

December 12, 1963

The Hon. Paul Martin, P. C.,
Secretary of State for External Affairs, Canada,
House of Commons,
Ottawa

Dear Mr. Martin:

On 29 November 1963 I received your letter dated 21 November 1963, together with Volume 2 of the Crippen Wright interim report; also copies of two letters from Montreal Engineering Company dates 23 October 1961 and 7 December 1961 respectively, which were enclosed.

As on previous occasions, with a view to facilitating comment, I have numbered the paragraphs of your letter consecutively from the beginning.

Re your Para 1

I would observe that the new U. S. projects to which you refer are not on the line of flow of floods originating on the Upper Columbia, and, in consequence, in the U. S. allocations to tributary basins, are not substantially competitive with the Canadian storages on the Columbia, which are unique in the protective service they can provide to the U. S. If the Canadian storages are not built, then Grand Coulee must be operated for flood control, and heavy power losses will result at this important site.

In your comments on flood control in this paragraph or elsewhere, I fail to find any reference to the very important questions which I raised in regard to this aspect of the treaty on Page 2 of my letter to you of 31 October 1963, including my reference to my earlier letter to you of 23 September 1963 and to my article in the CI of IA Journal, a copy of which I sent you.

Let me assure you these are questions of vital significance to the proper interests of Canada, all of which call for protective action in the revision of the treaty or its rejection.

Re your Paras 2 and 3

Regarding your agreement that the limitations of the ICREB Report necessitate extreme care in its use: Since the report clearly concludes that on physical and economic factors there is little to choose between the three plans, I feel sure you will agree that the decision should rest on more fundamental considerations, such as the maintenance by Canada of the physical as well as the jurisdictional control over the operation of the storages. This control can only be achieved by placing as much of the storage as possible in Canada at the highest elevation which supply permits. This is a characteristic of the Dorr Plan, but is lacking in the others.

In the last part of your Para 3, you speak of the rights given to Canada under the proposed Columbia River Treaty to divert in 20, 60, and 80 years as in Article XIII, Paras (2), (3), and (4).

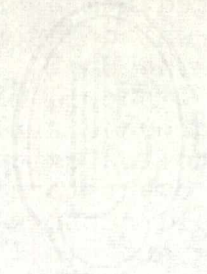
I must register the strongest objection to the misconception evidenced by your use of the word "given". Article XIII gives Canada nothing! It takes away and surrenders a position which for over 50 years has come to be accepted as a basic right in Canada as it has in the United States since its earliest days. This is a right which was recently re-affirmed and insisted upon by the U. S. in the IJC Waneta Order. In this, perhaps I should mention, you should know that the U. S. enforced Article II of the Boundary Waters Treaty to the extent of maintaining their exclusive control over stored waters on the Flathead, which they could capture at Hungry Horse or elsewhere, by invoking Article IV of the BWT to deny Canada the construction of Waneta by reason of a very minor matter -- the flooding of some 2-2/5 acres of undeveloped, non-productive land in the U. S.

Apart from the time limits imposed in Article XIII, which would delay action in a matter which has now become of immediate importance, may I suggest that in dealing with the United States, a future right and its exercise are two quite distinct matters, as I have learned painfully in a decade of first hand experience. In this case for example, under Article XII (5), you cannot even build Dorr without U. S. consent, and I forecast that the price set on this consent will be so high that any project to do so will be made quite uneconomic. May I observe that Dorr is necessary to exercise the right which you say is given to divert from the Kootenay.

Moreover, under Article XIII (1) you must have U. S. consent to divert "for any use, other than a consumptive use" out of the Columbia River basin. No major project to divert to the Prairies, for example, can be other than a multi-purpose use, in which power generation is a major component. Again I forecast that the price of U. S. consent to the power aspects of a multi-purpose diversion will be prohibitive. I suggest that the U. S. has prepared for the enforcement of this purpose by the provisions of Article XVIII Para (3) by which "Canada and the U. S. shall exercise due diligence to remove the cause of......any injury, damage or loss occurring in the territory of the other as a result of any act...under the Treaty".

A diversion out of the Columbia basin will, without a doubt, be construed as an injury to the U. S. because of the right given the U. S. under the treaty to build Libby, and such a diversion would cause damage and loss in the U. S. exceeding benefits. So whether or not a right has been given to divert for consumptive use, or any other use, its exercise will be subject to consent, and if this has not been given, the damages could be prohibitive.

In the result, in the practical conditions to be met in the Columbia River basin, this is an iniquitous arrangement under which Canada is to be bound and the U. S. in fact left free. Moreover, it is well that you should recall that under Article XVI, Canada will have agreed to the settlement of disputes by the IJC or otherwise under the code of law provided by the treaty itself, including the intent expressed in the Preamble. Note particularly Para (4) of this article, which provides that decisions of the IJC or other forum shall be accepted as "definitive and binding" and that the parties "shall carry out any decision".



Re your Paras 4 and 5

From the foregoing, you will note my warning that once Article II of the BWT has been superseded, or laid to rest, if you will, and despite the fact that Canada is stated to have certain rights to divert from the Kootenay to the Columbia, Canada has not been relieved of responsibility for injury or damage occasioned thereby. In fact, under the treaty, you must know, I repeat, that the IJC, or other tribunal, has been vested with jurisdiction to determine injury or damage, and such decision Canada has contracted in advance to accept as "definitive and binding" under Article XV (4).

May I say that your assertion in your Para (4) that the U. S. would not divert from the Kootenai, that is the Libby reservoir, because of the right given to Canada to divert upstream "with no treaty provision for any liability for damages incurred downstream in the United States" is entirely illusory as I have explained above.

I say to you Mr. Martin, as Secretary of State for External Affairs, Canada, with the greatest seriousness, that if this proposed Columbia River treaty is ratified, Libby will be built by the U. S., and for all time thereafter, this action, made possible by yourself and your colleagues in the Go ernment of Canada, will have deprived Canada of the beneficial use and control over the waters of Canadian origin in the East Kootenay. The only benefit we will receive will be what may come to us as a bye-product, of little account, of the regulation of Libby, which is vested in the U. S. to be carried out without restraint other than the minor requirement presented in the IJC Kootenay Lake Order regarding levels.

May I say also that even if the treaty or protocol should remove the right of the U. S. to claim damages for our East Kootenay diversion, the U. S., having invested some hundreds of millions of dollars in the construction of Libby and Kootenay Falls downstream, can be expected to exert the greatest political, economic, and moral pressure to persuade Canada to forego any plans for diversion.

My counsel to you, as an old friend of very long standing, is to withdraw from this dangerous imbroglio, while yet you may, for the sake of Canada.

Re your Para 6

In reply to your inquiry regarding reports made by the IJC to the Governments: The report of the International Columbia River Engineering Board of March, 1959, was made available to the two governments for preliminary information by mutual consent of the U. S. and Canadian Sections IJC. The Commission's discussions of this report were recorded verbatim in the IJC Proceedings, and extend over many meetings. Copies of these have also been made available to the two governments.

As Chairman of the Canadian Section IJC, I have had the privilege of appearing before the House of Commons Committee on External Affairs to keep the members currently informed. This evidence appears in the "Minutes of Proceedings and Evidence" of the Committee.

In response to letters from the Governments dated 28 and 29 January 1959, the Commission presented on 29 December 1959 its report on "Principles for determining and apportioning benefits from the Cooperative use of Storage of Waters and Electrical Inter-connection within the Columbia River System".

Subsequently, the Governments undertook direct negotiations and the Commission, as such, was not called upon for further reports.

Re your Para 7

I am obliged to you for the loan of the Crippen Wright Report, Volume 2 of the interim edition, with certain corrections you say to make it correspond with the final edition. I have read this volume 2 with close attention and I find that my memory of it as I reported on Page 4 of my letter to you of 31 October 1963 is substantially correct.

I note in respect to the summary of findings on Page 2 of your letter of 8 October 1963 that you reproduce No. 4 and No. 5, but that you omit No. 3 which reads:

"By creating storage reservoirs in the upper valley of the Columbia so as to back water to Columbia Lake, the diverted flows can be increased, conveniently and economically, beyond 5,000 cfs; it is recommended that they be increased up to 10,000 cfs from the Kootenay and 1,500 cfs from Findlay Creek, which represents virtually complete diversion".

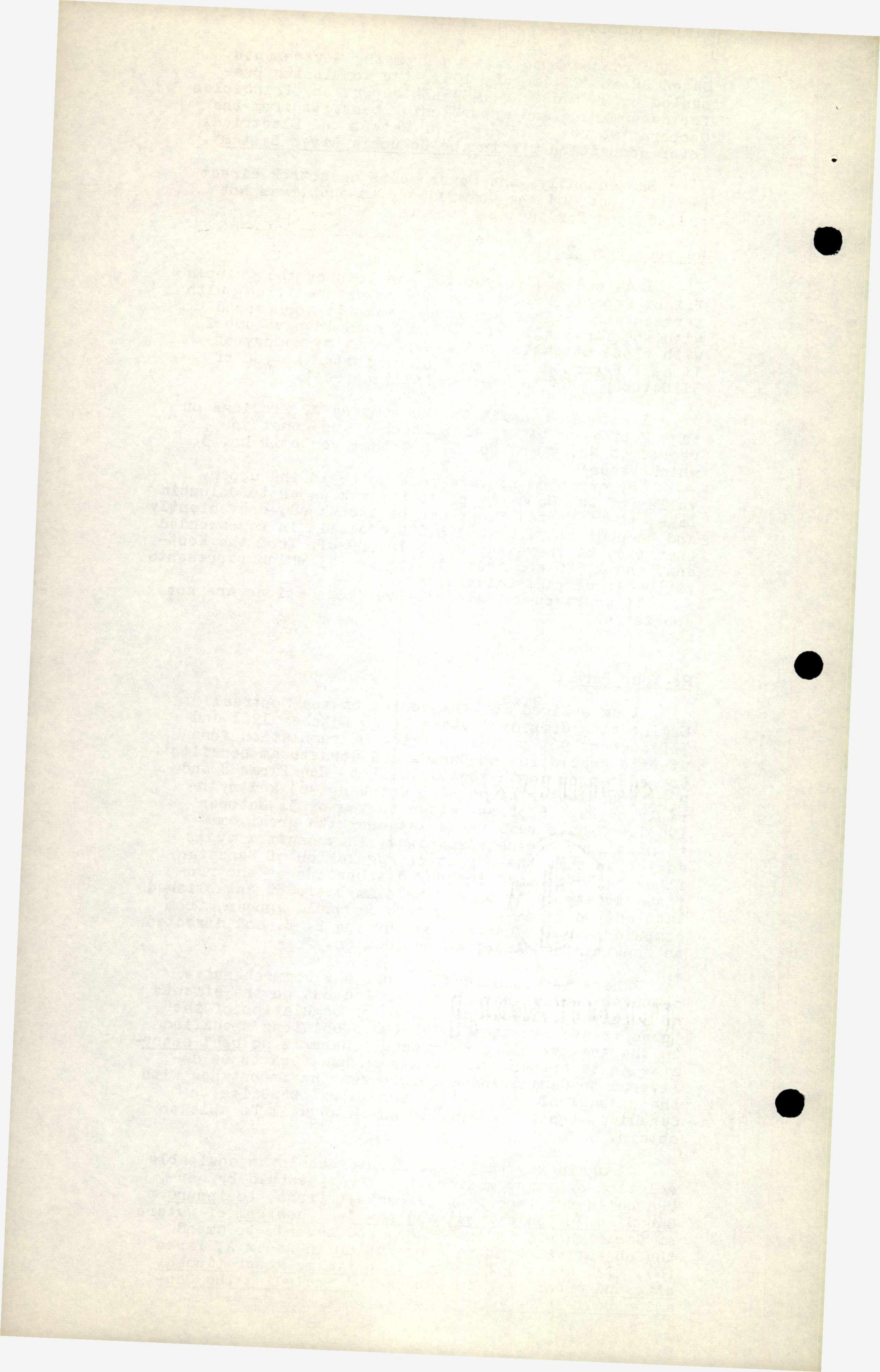
It would seem that these recommendations are not consistent.

Re Your Para 8

I am obliged for the copies of the Montreal Engineering Company letters of 23 October 1961 and 7 December 1961 on the conflict of regulation for at-site generation in Canada and downstream benefits to generation in the United States (See Paras 8 and 9 of your letter to me of 8 October 1963 and my reply on Page 6 of my letter to you of 31 October 1963). I have read these letters with great care to make sure of their meaning. They confirm my anxieties that the result of regulation of Canadian flows being assumed in your discussions of the proposed treaty rests on a very slim basis of established fact and most on "short cuts", it would appear, from computer studies carried out by the U. S. and directed to "optimizing" American production.

There is no indication that any comprehensive computer studies have been carried out on the effects on supply to the Canadian load of regulation of the three treaty storages under the conditions specified in the treaty. In consequence, there is no real assurance as to either the downstream benefits to be delivered to Canada and -- of increasing importance with the passage of time -- of the actual benefits to Canadian at-site generation which we will be able to obtain.

I again say that in order to obtain an equitable solution of these matters the treaty should be corrected in two important respects; first, to insure Canadian jurisdictional and physical control of waters of Canadian origin in Canada, and second, to amend the objective of storage operation in Annex A, Paras (6), (7), and (8) to read "to optimize generation at site and downstream in Canada and including the Canadian half-share of the benefits in the U. S."



If any adjustments to the results of this procedure are desired by the U. S., they can be arranged for in the "interconnection agreement" provided for in Annex A (7), it being understood, of course, that Canada will be compensated for any loss and receive a half share of the net benefits which result.

I note also in the Montreal Engineering Company letter of 7 December 61 the increasing difficulties which will result from the reduction in the volume of Canadian storage if High Arrow is abandoned. Such a probable eventuality emphasizing the need to return to Sequence IXa with its greatly increased flexibility because of the Dorr-Bull River-Luxor storage being available upstream from Mica in addition to Murphy Creek below and the additional storage on Kootenay Lake as well as Duncan. This arrangement dispenses with Libby and still provides all the stated U. S. requirements for regulation for power and for primary flood control.

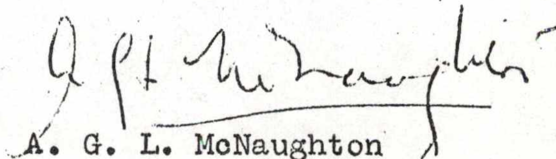
I would hope you would cause a computer study of this plan also to be carried out.

I note the reference, in Para 2 of the Montreal Engineering Company letter of 7 December 61, to certain curves showing the relation of downstream benefits to total Canadian storage volume. It is clear that the opinions expressed by Montreal Engineering depend in large measure on these curves and on this account I would be interested to examine them.

May I mention that similar studies were originally developed at my instance in the first IJC work group and I was never satisfied with the information provided by the U. S. Army Engineers. Similar errors continue to be present in the publications of Krutilla, which minimize the credits to Canada.

If you have no objection, I propose to retain the Crippen Wright Report for further study and will then return it to you.

Yours very sincerely,



A. G. L. McNaughton

Ottawa, December 16, 1963.

Dear Sir:

In Mr. Martin's absence, I wish to acknowledge receipt of your letter of December 12 and tell you that it will be brought to his attention immediately upon his return.

Yours sincerely,

Original
Signed by

J.D. Edmonds,
Special Assistant to
the Minister.

General A.G.L. McNaughton,
Fernbank,
Rockcliffe,
Ottawa, Ontario.

[illegible] 16, 1959.

Dear Sir:

In [illegible] absence I wish to acknowledge receipt of your letter [illegible] and to tell you that it will be [illegible] to his attention immediately upon his return.

[illegible]

[illegible]

[illegible]

OTTAWA, January 21, 1964.

Dear General McNaughton:

The long, and sometimes rough, course of the Columbia River negotiations seems to be reaching its end. It is only appropriate that I should now personally send you a folder recording the results.

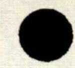
Believe me, General, I have made every effort to take account of the many very good points that you have made to me over the past several months in our conversations and correspondence. I am satisfied that the settlement which we are now making is the best attainable if the Columbia is to be developed at all. Whatever you may think of the outcome - and I hope that you will regard it as satisfactory - you can be sure that I have valued your advice. As the Government's principal negotiator in these closing stages I have had to take the responsibility of judging what was negotiable and then I have had to bargain as hard as possible to get acceptance of our point of view. Generally, I think we have been successful. All in all, I am satisfied that the agreement which has been reached will be of great benefit to Canada and will fully protect our sovereignty.

Warmest personal regards.

Yours sincerely,

(Sgd.) P. Martin

General A.G.L. McNaughton,
Fernbank,
Rockcliffe Park,
OTTAWA.



A. G. L. McNaughton

393 Fernbank Road
Rockcliffe Park
Ottawa, Canada
SH9-7002

27 Jan 64

N. A. Robertson, Esq.,
Under Secretary of State
for External Affairs
Ottawa

Sir:

I refer to the Secretary of State's letter to me dated 21 Jan 64 and to the papers enclosed therewith which made reference to the stream flow records for "the thirty year period commencing July 1928" which have been substituted for the flows for the 20 year period specified in para 6 of Annex B to the proposed Treaty on the Columbia River dated 17 Jan 1961.

I would be greatly obliged for 3 copies of these records so that I can pursue the studies I have indicated to Mr. Martin that I have in hand. I assume that these data will embrace for each of the three basins namely the Upper Columbia, the Kootenay and the Pend d'Oreille which are involved, the mean monthly flows at the various dam sites in Canada and at Libby in the U.S. for each of the water years of the new period together with totals for each year and the average for the period.

Yours faithfully,

(Sgd.) A. G. L. McNaughton

Editor's Note: Original of this letter received in hand written form.

February 10, 1964.

Dear General McNaughton:

In the absence of Mr. Norman Robertson I am replying to your letter of January 27 regarding the stream flow records involved in the most recent Columbia River arrangements.

We are very pleased to let you have on loan one of the few available copies of the Report on the Extension of Modified Flows Through 1958. You may, of course, be able to get extra copies for your permanent retention from some officer of the Columbia Basin Inter-Agency Committee, the composition of which is indicated on the inside of the front cover of the Report. Meantime, I trust that the enclosed copy will be of assistance to you in connection with the studies which you are carrying out.

Yours sincerely,

(Sgd.) A. E. Ritchie

A. E. Ritchie

General A. G. L. McNaughton,
Fernbank,
Rockcliffe Park,
OTTAWA.

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McNaughton relating to the Columbia
River Treaty and Protocol. --
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