

1 FOR GENERATIONS

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19 **Introduction by Professor Cook:**

20 Ladies and gentlemen welcome to our seventh in the series on the Columbia River Treaty which
21 is sponsored by the division of continuing education, and the Alumni association of Simon Fraser
22 University. Our speaker tonight is Mr. Larrat Higgins who is an economist with Ontario Hydro. However,
23 he wishes to make it quite plain he is here tonight on his own steam, his own power I should say.

24 **Mr. Higgins:** Own power, your steam. My power, your steam.

25 This is quite clearly that he is not here for Ontario Hydro. But when he returns to Ontario, we
26 have to explain we sent him on holiday [...]. He was born on the mountains of Chile, in South America,
27 75 miles from the Pacific with a Canadian father, and a mother of American origin. I don't think we've
28 had more of a mixture than that. Mr. Higgins's has been with Ontario Hydro since 1951 starting as a
29 member of the Ontario Hydro Treasury and Operations division. During the period from 1954 to 1956 he
30 worked on problems on how they would operate under the Niagara Treaty of 1950. But in the period from
31 1956 to 1958, he went to Imperial Tobacco Company to do some market research for them. Following
32 that period, his association with the Columbia River people began. For in the period from February 1958,
33 to December 1958, he was technical advisor to the Department of Economic [...] on the Columbia River
34 development. This committee recommended that a policy for Canada be administered by the cabinet. And
35 I think it's safe to say that it's never been made public. And since then he has been with Ontario Hydro,
36 and his specific concern is forecasting power demands for Ontario. Mr. Higgins has, of course, written
37 fairly extensively on the subject of the Columbia River Treaty. The ones that come immediately to mind
38 are his articles in the International Journals in 1961, and his articles in Ian Lumpkin's collection "Quarrels

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39 of the 49th parallel” in which he had an article called “Sell Out of Canadian resources: The example of the
40 Columbia River Treaty”. And without further adieu I give you Larret Higgins.

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42 I’ve prepared a brief sort of set piece to deliver to you... won’t take very long. I hope that we can
43 then just get into fairly open discussion. Is that the format in which you have there. Not monologue?

44 **Professor Cook:** Talk as long as you wish sir... but no more than an hour.

45 An hour all right. So I won’t pull a Fidel Castro on you. Well I’ll start on my paper. I may deviate
46 and wander off the track I think that this is an item in which we can, it is controversial. I think discussion
47 on the thing is excellent. So I’ll start on my set piece and see where we get. It says here, Mr. Chairman,
48 ladies and gentlemen let me open my remarks by congratulating Simon Fraser University for the public
49 service that it is rendering by holding this series of talks on the Columbia. I am particularly impressed by
50 the array of speakers that you have heard, and are yet to hear. They are mostly men who played important
51 roles in the development of the Columbia, and therefore speak with the highest authority on the subject.
52 The other thing which I think lends value to this meeting is that you will be exposed to a major portion of
53 the very broad spectrum of opinion which is still held on the subject of the Columbia River Treaty. At the
54 outset, perhaps I should mention that I was one of the critics of the Columbia River Treaty before its
55 ratification. And I must also admit, like almost all of the others, my views of the Treaty have hardened
56 rather than softened with the passage of time, and the unfolding of events. There has been on this subject
57 very little coming together. One might say time heals all wounds but one might also say time wounds all
58 heals.

59 However my purpose here is not to lament that which cannot be undone, but to take what one
60 might call a post-diluvium view of the Columbia River Treaty, in order to attempt to discover if there are
61 lessons to be learned from the experience, which may be helpful for future decisions. I believe this is
62 where the value lies. And secondly to see what if anything can be done to remedy the defects that may
63 exist in the present arrangements. I believe that this approach is more constructive than a simple replay of
64 the old arguments upon which there are still sharp division of opinion. During this decade of the 1970’s,
65 we in Canada face a number of important decisions concerning the development of major Canadian
66 resources which will involve a relationship with the United States. There is for example the James Bay
67 development in Quebec, the harnessing of the Nelson River in Manitoba, there are the Athabasca Tar
68 Sands in Alberta, and there has been some gas discovered in the Mackenzie River Delta. There are
69 proposals for development for all of these things and in some of the cases development is proceeding. A
70 little removed from the public glare at the moment are the alternatives for development of the Yukon
71 River in Canada by diversion to the Takoo inlet or elsewhere.

72 In the previous decade, the 1960’s, apart from the Columbia, you will recall there was the
73 Saskatchewan potash, there was Churchill Falls power in Labrador, not to mention, the great water crisis
74 that was said to exist in the mid 60’s and the North American water and power alliance, or NAWAPA for
75 short which I think is related to the Columbia River Treaty. The decade before, there was the Saint
76 Lawrence Seaway, there was Labrador Iron, and there was the TransCanada Pipeline. Here in British

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77 Columbia, there was the Kaiser deal, and the Puget Sound utilities offer to build Mica Creek, which I
78 think one should bear in mind as background to the Columbia. The Kaiser deal offered to build a dam at
79 the mouth of the Arrow Lakes, pay for the dam and return to Canada 20% of the downstream benefits.
80 The Puget Sound utilities offer was to build Mica Creek, to pay for the dam and in return, to have a major
81 say in its operation for the next 50 years with an option to renew for a further 50 years. By the criteria in
82 force in the 1950's, these offers were rejected, including the deal, by the passage of the International
83 Rivers Improvement Act, over the objections of the government of British Columbia. And I think that that
84 action whether it was wise or unwise, did have the effect of sowing the seeds of considerable political
85 acrimony, between Premier Bennett's government, and the government in Ottawa.

86 Of these projects I would suggest one of the most significant was the building of TransCanada
87 pipelines, or more properly the discussion that accompanied it. I say this not because it was a searing
88 political experience for the Ottawa Liberals and federal politicians generally, but for the effect that it
89 seems to have had on Canadian policy and the resource field in the 10th decade. The concept behind the
90 TransCanada Pipeline was one of delivering Canadian resources, to Canadian markets, through Canadian
91 territory. In other words, 20 years ago, it was what today would be called a nationalistic approach. I
92 suggest that this is a sound and farsighted approach for Canada. However it did lead to the pipeline debate
93 and after the resulting change in government, the Board and Commissioner on Energy was shocked at the
94 fortunes made by the Texas pipeliners such as Clint Merchansen, who made about 2 million dollars out of
95 the deal.

96 I further suggest that this is a good way for us to the technology we need. We pay for the service
97 once and for all, and there is no continuing obligation. It is much better, and I think cheaper in the long
98 run than the alternative which has been so popular; that of selling ownership and control. And this of
99 course is a perpetual and open ended transaction. The pipeline was rammed down Parliament's throat.
100 And it was closure, rather than the merits of the issue that caused the debate. It was the treatment of
101 Parliament by the government which caused the defeat of the Liberals in 1957. But the lesson learned by
102 the politicians was I suggest the wrong one. It seemed to be that the Canadian interest should be
103 subordinated to the North American interest. A policy of continentalism it has been called in its full
104 Napoleonic sense, with Canada playing a subservient role as part of the continent. And it's this view that
105 seemed to dominate thereafter. Canada's role of course was the provision of Canadian resources. And this
106 analysis was reinforced by Canadian and other economists who largely take the view of the Chicago
107 school that we operate in a perfectly competitive world economy.

108 I think this view is being called more and more into question in that the competitive model is
109 perhaps not an adequate one for the kinds of transactions which are involved in Canadian resources which
110 for the most part tend to be transactions of bilateral monopoly as, for example in the trade union field,
111 industry bargaining with one union. This brings me to the first of the lessons that I think we need to learn
112 from the Columbia River Treaty. And we can subdivide lesson 1 into three little sub-divisions. The
113 Columbia River Treaty was; 1) a sale at a fixed price; 2) a long term sale, and; 3) a sale at a price which
114 was at the time, lower than the best United States alternative... with the gap between this constant
115 unchanging price, and the cost of the alternative increasing almost daily.

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116 One of the difficulties of a transaction that offends either of these three little points that I have
117 made, is that it tends to increase United States dependence upon Canada, and creates vested interests in
118 that country. I'm also suggesting to you that this confers no real favour on the United States. And it vastly
119 complicates the problem of maintaining Canadian sovereignty, which I define as nothing more or less
120 than the ability to act independently when things go wrong. There is always that condition to sovereignty.
121 If things are going fine, sovereignty is a meaningless concept. It's only when things go wrong, it's vital in
122 the crunch, at other times it doesn't matter.

123 In this connection I welcome the decision although perhaps not the method of the federal
124 government in imposing an export tax on oil. This is a tax which rose to \$6.20 in February. I do not say
125 this in a self serving way, as an easterner since I believe that the owners of the resource, namely the
126 people of Alberta, have a better right than other Canadians to the economic rent that's involved. But the
127 important thing that Mr. McDonald has done is to convert a potentially serious international problem
128 facing Canada, into a minor internal problem which Canadians can resolve for themselves. And I think
129 this is where the importance of that decision lies. It's a decision which I do not think could or would be
130 taken in the 10th decade. I also welcome the decision of the government of British Columbia to raise the
131 price of gas which is exported to the United States so that it matches the price of new supplies in that
132 country. When you have developments such as our taking place in oil and gas, postponing a decision like
133 this, the longer it's postponed the more difficult it becomes to make his kind of a decision for the reasons
134 of the vested interests I have already mentioned. Moreover, or as an aside I would say, I'm more
135 impressed with a reality of a natural gas supply crisis in the United States in 1974, than I am with the idea
136 that there is an oil shortage.

137 The oil shortage may turn out in the short term to be nothing more than an inventory imbalance
138 due to hoarding and in the way the Shah of Iran has suggested, and in the way Ralph Nader has suggested.
139 I believe that there is a possibility that late in '74 or early in '75, the United States will have oil flowing
140 out of the woodwork. Once there are convincing signs of stability in the Middle East oil prices. I believe
141 that the conditions of stability for the Middle East oil prices will probably occur when a determination is
142 made of what the alternative supplies for North America are. Whether these be Athabasca Tar Sands,
143 which will lead to future problems for Canada to resolve, or some alternatives such as the production of
144 oil from coal and gas from coal. Many people seem to forget that Hitler ran World War 2 on synthetic
145 petroleum so the technology doesn't have to be developed. The cost might be a deterrent. Remedies such
146 as these are not available to redress the growing gap between the value of the downstream benefits and
147 the return to Canada for them. This is one of the major hazards of a fixed price contract paid for in
148 advance in a lump sum.

149 In this respect, it is necessary to distinguish between British Columbia and Canada in looking at
150 the outcome of this transaction. While it is true that British Columbia received its check for some 275
151 million dollars on September the 16th 1964, it's useful to remember that this was paid by Canada, not by
152 the United States. The government at Ottawa gave the Americans very easy credit terms for some 200
153 million of the cash settlement in that it was paid at a rate of roughly 30 million a year for 7 years at an
154 interest rate which was 4% for the first year and 4 ¼% thereafter. So the final payment to Canada did not
155 come until November 1971. And this growth rate of 4 ¼ % which was the yield on these special non

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156 negotiable bonds that Ottawa bought, turned out to be less than the inflation rate affecting the
157 construction costs in British Columbia in that period. So while British Columbia may have been able to
158 protect itself, Canada was not able to do so. The other thing is that the yield was lower than the yield in
159 which the payments were capitalized, so that a loss in the order of at least 10 million dollars was involved
160 there.

161 I have yet to see a statement of the financial results of the Columbia Treaty to compare with the
162 predictions as set out in the background paper, which was issued with the Protocol in 1964. You may
163 recall that this offered glowing promises of a capital surplus of 53.4 million as of April 1st 1973. And this
164 takes into account the timing of payments received and payments made, and they were put on an
165 equivalent present worth basis by shifting them at a 5% interest rate. As far as I can make out, the costs of
166 the dams themselves on that basis have amounted, or at April 1st 1973, amounted to some 622 million
167 dollars, compared to an estimate made in '64 of 448 million dollars.

168 The receipts on the other hand come to something on the order of 507 million dollars, or about 1
169 percent in excess of the 501 million that was indicated in the background paper. So what has happened is
170 both the costs and the revenues have risen, but the costs have risen to a far greater extent than the
171 revenues. So this capital surplus which was to pay for half of the generation at Mica has turned into a
172 deficit of some 115 million dollars. All of these figures exclude operating and maintenance costs
173 applicable to the High Arrow Dam, and certainly a portion of them to Mica and Duncan over the next 30
174 years. And at the present time, these operating costs are escalating at a phenomenal rate as we all know
175 due to the world wide inflationary situation. Nevertheless these future payments are a proper charge
176 against the monies received from the United States over the next 30 years. If you tried to capitalize them
177 at a discount rate of 5% used in the background paper... if the inflation rate is larger than 5%, the far
178 distance payment are just as large as the ones next year. And nobody really knows what that number
179 really amounts to.

180 In any event the present worth of these is substantially greater than the total of 47 million dollars
181 on operating and maintenance costs, in that order, which I have inferred from figures given in Dr.
182 Keenleyside's testimony before the External Affairs Committee in Ottawa in 1964. Now lest I be accused
183 of breaking my undertaking not to keep open an acrimonious debate which took place a decade ago, let
184 me simply make the point that the financial results of the Columbia have been disappointing due to a
185 large part of inflation, and in spite of cutting such corners as failure to clean up the reservoirs, and
186 occasional harsh treatment of the victims of progress, or people in the way as James Wilson has called
187 them. And Donald Waterfield has also given us a bitter example of an experience in the Arrow Lakes in
188 his book published recently called "Land Grab".

189 I think a case can be made in general terms for the thesis that the inflation in which is presently
190 ravaging the entire free world can be traced in large part to the method used by the United States in
191 financing the Vietnam War. This was an unpopular war, and so it could not be financed as World War 2
192 was largely by the sale of victory bonds. Nobody in the United States paid attention to the advice of Lord
193 Keynes in an excellent, excellent little manual published in about 1940 called, "How to pay for the war".
194 The United States government simply ran deficits... both in its government account and in its balance of

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195 payments. And so the rest of the world is helping to pay for the Vietnam War through inflation. And I
196 suggest that this applies with a vengeance to British Columbia by virtue of the Columbia River Treaty.
197 However I do not think that the Treaty can be reopened on this basis. And here I'm trying to think of my
198 second objective. Are there defects in the present arrangements that can be remedied?

199 I think that it needs to be shown, if we want to reopen the Treaty, it needs to be shown that there
200 are parts of the Treaty which rests upon a fallacy. I think it's very important to distinguish between an
201 error in an investment decision by Canada and a fallacy or something by that I mean the assumption that
202 something was true which is not true. And if a fallacy is likely to cause grievous injury to Canada, then I
203 am convinced the United States will, at the very least be prepared to discuss it. Whether the same is true
204 of Ottawa, I'm less sure. Since under the present management, some loss of face would inevitably be
205 involved.

206 I think there is evidence for the existence of a fallacy and I think it is to be found in part B section
207 4 of the terms of sale. This extraordinary clause reserves to the United States, the right to determine the
208 actual downstream electrical benefits. And it also specifically restricts any discussion between Canada
209 and the United States to the definition of the downstream benefits as calculated under Annex B of the
210 Treaty itself. If this article has any meaning at all, it must mean that there are other possible
211 determinations and since what the United States is confronted with is selling these benefits purchased
212 under the Treaty or reselling them to utilities in the United States, there exists a good possibility that they
213 can be predetermined upon different criteria. For the period of the sale, these benefits, year by year, have
214 been agreed upon; they are published in a booklet put out by the department of Northern Affairs and the
215 department of External Affairs jointly.

216 The alternative interpretation in which they would give you is to say okay the agreed benefits in
217 the year 1989, the actual ones are not these agreed ones because this will depend upon stream flows. So
218 this is ambiguous. I am suggesting that there is perhaps a fallacy in the method of calculating these as
219 indicated in Annex B in the Treaty. This is a controversial assertion.

220 The notion of declining benefits to storage stems in large part from the excellent work of John
221 Krutilla on the effect of additions to storage as they affect prime power in purely hydro and mixed
222 systems. This analysis quite correctly states that the benefits attributable to storage decline as the amount
223 of storage increases. It also correctly states that as a system evolves into a mixed hydro thermal system,
224 the amount of prime power attributable to that storage decreases. What Krutilla completely omits
225 however, is that in a mixed system the concept of prime power, which is a purely hydro concept becomes
226 irrelevant. Storage in this situation becomes a substitute for more expensive types of capacity and it
227 increases in value as the ratio of thermal and especially nuclear capacity relative to hydro increases. In
228 other words what we are saying is that storage does not compete with nuclear capacity: it compliments it.

229 In 1964, there were only a very few utilities in the world who had experienced this transition from
230 a purely hydro system to a mixed system. In North America, the Tennessee Valley Authority was I
231 believe the pioneer. And in Canada, Ontario Hydro was just entering the transition phase. In British
232 Columbia and least of all in Ottawa, there was, I suggest, practically no understanding of the process.
233 General McNaughton understood it as you will see upon reading his article in the spring 1962 issue of the

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234 International Journal. And if you want to see evidence that Ottawa did not understand it, you have only to
235 look at the point by point commentary on that article made by Mr. Gordon McNabb, and this in the
236 transcript of the hearing for the External Affairs Committee.

237 It is Krutilla's theory that finds expression in Annex B of the Treaty and in which leads to the
238 decline in benefits over time. This is a misapplication of Krutilla's theory I am suggesting. And there is a
239 paradox in Annex B. It is that the greater the actual benefits of Canadian storage to electricity in the
240 United States, the more rapid is the decline in the share payable to Canada. It is the existence of Canadian
241 storage which provides the justification for the installation of additional capacity downstream in the
242 United States. But under Annex B, the calculation of downstream benefits is made by comparing the
243 energy output possible by the United States installed capacity at any time, with or without Canadian
244 storage. Without regard to the timing of that energy, and without regard for the fact that much of the
245 growth in the American capacity would only occur by virtue of the existence of Canadian storage
246 operated under an assured plan.

247 One possibility which lies open to us perhaps within the terms of the Treaty to limit the decline of
248 benefits payable to Canada under Annex B is to be found in the table of capacities which is attached to
249 Annex B of the Treaty. This table lists the estimated ultimate installed capacity of the American
250 installations. Now the capacity that's planned already exceeds the amount shown in this table. One of the
251 difficulties is that even before the Protocol was signed, and before the Treaty was ratified, that was
252 known. However, what we're talking about is a calculation of benefits. And this should, it is possible to
253 interpret the Treaty or to agree to interpret the Treaty in that way. In practice I believe that the amounts of
254 capacity which will go into the mainstream of the Columbia will be very large indeed. Where the table in
255 Annex B indicates the amount will be something like 19 million kilowatts ultimately installed. This has
256 already gone up by about 20%. I believe the ultimate installation is more likely to be something in the
257 order of 32 million, nearly double. It seems quite logical that sufficient downstream capacity will be
258 installed to utilize the maximum discharge from the three powerhouses from the Grand Coulee Dam.
259 Otherwise the pool elevations at downstream dams will be subject to undue fluctuation as Grand Coulee
260 is used for generating peak power. Alternatively water will have to be wasted at downstream dams.

261 Without Canadian storage, the American alternative is to install more thermal capacity, which
262 would be operated at a lower capacity factor, and consequently with higher unit costs than is the case with
263 storage. The opportunity to take advantage of economics of nuclear base load capacity would be severely
264 curtailed in the United States in the absence of upstream Canadian storage. In other words, the benefit of
265 Canadian storage as the US system becomes a mixed system tends to increase and this benefit changes its
266 form from the form of prime power, to the savings involved in the investment required to meet the
267 demand in the United States. This saving increases over time, the benefits payable to Canada on the other
268 hand decline. And by the end of the 30 year sale period, I think that it is fairly predictable that these
269 benefits for the following 30 year period returnable to Canada will be trivial indeed. I also believe that
270 there is a strong case to be made, that this is a fallacy embodied in the Treaty, and this should be capable
271 of remedy by negotiation and good faith between friendly neighbours who share a respect for truth.

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272 I might add there are developments which are possible on the demand side which might have the
273 effect of slowing down the rate of increase in the benefits of Canadian storage. And in particular these are
274 a significant increase in summer loads on the American system such as by a growth of air conditioning
275 load, or as might occur by interconnection with some other system such has occurred with California.
276 And secondly, they would be slowed down by an increase in the daily load factor which would tend to
277 limit the amount of short term hydraulic peaking capacity required. You will note in all of this that I have
278 referred to the value of the service to the United States, and I am suggesting that this value could be
279 calculated.

280 The presentation on the Columbia River Treaty and Protocol prepared in 1964 by the departments
281 of Northern Affairs and of External Affairs had this to say on the sales.

282 “The actual benefits which will be realized by the United States over the sales period cannot be
283 determined at this time as they are dependent upon a number of future conditions. It is therefore
284 impossible to compare the costs of these benefits to the alternatives sources of power which the United
285 States could have developed by itself.”

286 And goes on to make the astonishing assertion that the actual benefits purchased by the United
287 States are unknown. A little more evidence about the Canadian insight into the value of the United States,
288 the value to the United States is provided by Dr. Keenleyside, writing in the IEEE Spectrum issue of
289 September 1965. And I think that you’re very lucky to have Dr. Keenleyside coming here, because I think
290 this is a matter in which he can shed a great deal of light. What he writes and I have omitted some of these
291 words without changing the sense of what he writes, “Perhaps the most” and he’s talking about the
292 negotiation of the terms of sale before the January 22nd 1964, “Perhaps the most important single change
293 in the Canadian negotiating position was the decision to abandon the original idea of demanding a certain
294 number of mills per kilowatt hour of British Columbia’s share of the downstream electrical benefits. The
295 essence of the idea that was now developed was the purchase of the United States of a service.” The
296 control flow of the Columbia River and not so many kilowatt hours. ‘British Columbia contended that the
297 payment by the United States for this service should cover at least the costs of the three storage dams’ and
298 then he goes on to say, the sale was based on the value to the United States of the regulatory service.
299 What I am suggesting is that the sale based upon the costs of the three storage dams, and bore no
300 relationship to the value to the United States, which could have been any amount equal to or greater than
301 this figure.

302 For example, in Canada, we have been producing gold for many years under the subsidy of the
303 emergency gold mining assistance act, where the Canadian costs have essentially been something in the
304 order of 50 dollars an ounce. At that time we were selling gold at 35 dollars an ounce. If we were selling
305 it at 50 dollars an ounce to the United States, one could say that the value to the United States was 50
306 dollars an ounce or something more in practice it’s about 180 dollars an ounce. What isn’t known, I
307 suggest, is its value to the United States. And this is something that in a negotiating position, the United
308 States might be a little reluctant to admit so we have to estimate what this value is. Alternatively the
309 American’s could have made offered to us, and we could determine how much storage we would supply.

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310 Canada it seems was searching rather than for maximizing profits, was searching for a certainty
311 equivalence of energy accruing from randomly occurring stream flows. This is a legitimate exercise in
312 risk avoidance. Everybody who buys insurance gets into a contract where you're substituting a certainty
313 equivalent for an uncertain outcome. But Canada has itself exposed to the risk of inflation, and it lost.

314 It is less possible to make a similar argument on the Treaty with respect to payments for flood
315 control. And here I am distinguishing between a fallacy in the Treaty which I suggest it is grounds for
316 reopening and poor judgement by Canada which I suggest is perhaps not grounds for reopening. The
317 United States offer was clear and definitive. Half of the value of the damages prevented were estimated at
318 \$1.34, or at least a half of \$1.34 per acre foot per year for primary flood control of which the United
319 States wanted, about 8.5 million acre feet. And beyond that, the value to the United States which is stated
320 for secondary flood control, wanted in vast quantities, the total value was \$0.11 per acre foot, per year. In
321 other words less than 1/10th of the primary. At the time it was known that these values would appreciate
322 over the 60 years because one of the things that the Canadian storage would do, would be to permit
323 development in the flood plain in the Columbia totally apart from inflation. Canada mistakenly in my
324 opinion, accepted both of these offers. With respect to the special calls for emergency flood control
325 storage under article 4 2b as modified by article 1 of the Protocol, I suspect that the threshold level of a
326 severe flood should be defined as 800 000 cubic feet per second at The Dalles. As this is the basis of
327 distinguishing primary from secondary flood control. The Protocol sets this figure at 600 000 cfs which is
328 not considered serious by the United States.

329 The third paragraph of article 4 of the Treaty constitutes a servitude on Canada in that the service
330 must be provided to the United States of calls in perpetuity and they must be provided at no return to
331 Canada. Canada gets reimbursed, but has no return other than 4, one-time payments. The original intent of
332 this aspect of the Treaty was an offer by Canada to come to the assistance of the United States under
333 extreme flood conditions. It was not intended to be an offer of providing free insurance against damage
334 defined by the United States as minor.

335 And these are the principle points which underlined by second objective of detecting fallacies or
336 inequities in the Treaty which might be subject to remedy by mutual consent, since there is no provision
337 in the Treaty itself which requires anything more than consultation on interpretation. They indicate a
338 second and rather obvious lesson to be drawn from this particular Canadian resource development. That is
339 the need of thorough analysis. This is also a problem we had before, and it's one that we will encounter
340 again. I don't think it's avoidable, but I think it has to be guarded against.

341 My one experience of this kind of thing comes from the Niagara diversion Treaty of 1950, which
342 in its own way is a good Treaty. It hasn't given rise to too much difficulty, but the basis upon this Treaty
343 was drawn was that the monthly flows of the Niagara River are quite stable. And this is true. However,
344 when the Treaty became to be applied, it is the hourly flows that were monitored and have to be complied
345 with. These are the hourly flows over Niagara Falls. And since the Treaty required this hourly
346 compliance, the difficulty is that the hourly flows of the Niagara River are extremely volatile. The
347 analysis overlooks this. The flow of the Niagara River can more than double in a period of 7 hours. The
348 effect of this was to reduce the operating problem to the simple one of acquiring the skill, which in BC

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349 terms could be compared to the ability to drive up the Fraser canyon blindfolded at 60 miles an hour with
350 a delayed action steering wheel on the car. Eventually it was achieved. So the problem of analysis is I
351 think important.

352 And at this juncture I've come to the end of my formal statements, and I had some notes here, but
353 I've also come to the end of my promised time so I don't get into the Castro thing. Ok? And I'd add from
354 this point on, I'd welcome interruptions.

355 I think the, if there is a conventional wisdom in the development of Canadian resources, it can be
356 stated in 4 or 5 propositions which I have written here on another piece of paper. Just happen to have a
357 copy with me. And these propositions I think describe the criteria of the 1960's. Proposition 1 which sets
358 the scene. We see that we have a large resource which is lying unused or undeveloped or shall we say
359 flowing unpolluted to the sea. Enter the Canadian school of economists who say the unit costs will be
360 much lower if we develop it on a large scale. Enter economic analysis. The Canadian market cannot
361 absorb the large scale output, therefore let's make a deal for cooperative development with the United
362 States, and this has to be long term in order to amortize the capital costs involved and the 5th point which
363 always seems to come into it, let's hurry in case the American's do something else. This is precisely the
364 level at which the rhetoric at present concerning the Mackenzie Valley Gas Pipeline is being conducted.
365 Particularly point 5, "lets hurry or the Americans will do something else".

366 The inevitable consequences of this policy I suggest of being, the first thing one notices is that the
367 construction jobs vanish on completion of the project making it necessary to seek another deal. The
368 second thing that happens a little bit later is that the Canadian market grows to the point where it can
369 absorb the output. And this may involve a repatriation problem. Whether it involves a repatriation
370 problem or not, the final thing one notices is that the replacement cost of whatever it is you are talking
371 about has risen and consequently the project looks like a bad one. I think these are the, this is the general
372 sort of mode of reasoning that one follows. I think if you look at the Mackenzie Valley Pipeline, gas
373 pipeline, it's possible to divide the case here to three separate issues. And I think that if you do this you
374 can tend to isolate those issues which are controversial from those which are perhaps less controversial.

375 These three issues in that case I suggest are first of all taking points one, two, and three on the
376 economies of scale argument. The particular circumstance there is that the American's also have a large
377 resource in Alaska and we have an opportunity perhaps of moving US resources to US markets through
378 Canadian territory. And I suggest this is a fairly promising kind of a deal. The second thing that comes on
379 this is we have an opportunity in this perhaps to work out an arrangement whereby the Canadian market
380 as it grows can be served from Canadian sources of gas during this period.

381 I think this will work in a complimentary way because of the peculiarities of the Prudhoe Bay oil.
382 The gas there is associated with the oil. In the short term I think that the United States will desperately
383 need this oil, at least this gas. In the longer term it may be more prudent to re-inject the gas so that you
384 can get more oil out of the Prudhoe Bay Field so that the amount of gas destined for the United States
385 passing through this pipeline could easily decline and this could be phased with the growth of Canadian
386 requirements. And on that basis, there are the makings of an excellent deal which is mutually beneficial.

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387 And then in its own third little category all by itself, we have the question of whether we should
388 export our Canadian gas to American markets. And here I believe that we have already got ourselves into
389 some difficulty by committing 1/3 of our presently low cost reserves to this market and the National
390 Energy Board is determined we no longer have a surplus of gas. Now, this determination has been
391 reduced to a formula defining what constitutes surplus reserves and that's anything above 25 times the
392 demand 4 years hence. The adequacy of any level of reserve depends really upon how the energy flows
393 from that reserve of a non renewable resource can be replace sooner or later the reserve will be exhausted.

394 In the case of gas, the prospects really don't look to be very good, particularly in Alberta. The
395 prospects up north in the Mackenzie delta so far seem to have been kind of disappointing. The cost
396 discontinuity is a very large one. And so this suggests a fairly tough reserve or surplus definition. Now
397 there are people like Herman Kan for instance, who are convinced there is no crisis, there may not even
398 be a problem. And Herman Kan is an optimist I think largely on grounds that there will be developed
399 lower cost alternatives for energy sources in the future.

400 My own personal view is that it's unlikely that new energy sources will be at lower cost. There
401 will be an enormous size, once we learn how to generate energy from fusion; our energy is really on this
402 planet virtually unlimited. It's limited only by the capacity of the planet to absorb the waste heat and of
403 course nobody knows what that is. But it will not be lower cost energy. Some of the arguments put
404 forward time and time again about Canadian resources and this leads to point 5 in the proposition that I've
405 made, let's hurry before they go out of fashion. Where you have an increasing cost situation, and I believe
406 this is what we face in terms of all non renewable resources when they're depleted, but they will not be
407 technically outvoted, and that is the view I take. But Herman Kan believes that the transition to nuclear
408 fusion will be a lower cost phenomenon. And if you spend enough mega bucks, you can solve all
409 problems.

410 I believe that the expenditures required will be very large, but in general, we have a different
411 view of progress in the 1970's from that which prevailed in the 1950's. One of the aspects I guess of what
412 constitutes progress is the matter which has become important in the James Bay case particularly and it
413 has become important in the Mackenzie Valley gas pipeline case and it was important in the Columbia
414 and that is the rights of people who get displaced by what is known as progress. This is the subject to
415 where people like Jim Wilson or Donald Waterfield are much better qualified to speak than I. But I would
416 make a value judgement kind of observation, and this is that where we are pushing people aside in the
417 name of progress, that these they have a prior claim to the benefits, of that progress, in terms of the costs.
418 Where expropriation is involved, one of the tests of course is to whether the project is in the public
419 interest. What is the benefit cost ratio?

420 I would suggest that if you were to be displaced by one of these projects that you should be
421 compensated not at fair market value, but in the ratio to the market value that that benefit cost ratio
422 indicates. Now if this approach knocks the benefit cost ratio down to one or below it, then it's not
423 progress. I think once again, we tend to look at people as costs in these projects. We have in similar
424 circumstances and I am thinking of the approach that we take to our human resources when we want them
425 to go to war on our behalf, we call them war heroes we give them status in the community. And we have

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426 programs such as the DVA program to which I owe my University education. And I would suggest that
427 this is a different way of thinking about people who make these sacrifices for the benefit of rest of the
428 society. They are not a bunch of bums or aborigines to be pushed out of the way. I suggest they are in the
429 same category as people who have served their country well and at great sacrifice, and deserve
430 compensation and recognition. I think the thing about Donald Waterfield's book was the impact that the
431 experience made on the traumatic experience. And the impact that this made on the man's self-esteem if
432 you will.

433 The final thing that I would end with is that when we come to consider the other resource
434 developments in which we will face in the 70's and the ones we will face in the 80's is really the need to
435 keep our options open. To keep our freedom of manoeuvre, and in particular to keep our sovereignty
436 intact in the sense that when things are going badly we will be able to act independently to protect
437 ourselves. And one of the ways I suggest that we do this is to minimize the dependence of the United
438 States on us. And the way we do this is by entering into transactions at prices which do not differ very
439 markedly from the alternative costs in the United States. This introduces a somewhat novel idea in
440 resource development in Canada, and that is that we should maximize profits. The conventional jargon in
441 describing projects and this is true of the Columbia in the presentation. It's described as being viable.
442 Well I don't think viable is an adequate criteria because viable is a medical term that means that an infant
443 shall we say will probably survive. It's a minimum kind of criteria. In Canada I think that if we are to
444 deserve continued existence, we mustn't struggle to be viable, we must struggle to be excellent and I
445 suggest that there is plenty of room. Thank you very much.

446 Just about like Castro

447 **Audience:** [inaudible]

448 **Mr. Higgins:** I don't think that it matters. I don't think that you can make generalizations in this field. It's
449 quite possible; it depends on what you're talking about. For some things the private sector may be able to
450 do them better than the public sector. The public sector in my opinion is not very good at risk bearing.
451 The public sector in my opinion is frequently not as efficient as one would like it to be. We have in
452 Canada I think pioneered the development of something that's sort of half way in between. I think its
453 been quite successful for us. By that I mean the crown corporation.

454 I believe this is a format in which is very flexible and can be applied to a great many things. If you look at
455 some of our resource industries where these are large scale, certainly the problem of developing them in
456 the private sector on a basis of inviting foreign owned corporations in to take the equity which has been
457 such a standard policy of Canadians maybe needs to be looked at. We don't, we haven't imported equity
458 for financial reasons. We haven't really the extent to which we've sold equity to finance the investment
459 we put in place amounts to something in the order of 5% of all the investment put in place in Canada
460 since World War 2 ended. But the impact of that cumulative investment on foreign ownership and control
461 has been enormous. And this means that the leverage exerted on the direction of the flows of Canadian
462 savings into investment, the amount of that which is decided outside of the boundaries.

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463 **Audience:** The reason I raise the point is I find it difficult to follow your earlier argument about the
464 world's approach and then you ended up by saying the profit maximizing approach. These are the profit
465 maximizing approach is a private approach.

466 **Mr. Higgins:** No sir, I don't agree. The profit maximizing approach or a cost minimizing approach I
467 suggest is followed by it can be followed in any part of the economy. It isn't invented by the private
468 sector in that sense. Let me give you an example of these two things operating in the same firm and I'll
469 draw on Ontario Hydro as a firm. Ontario Hydro generates power in Ontario primarily for distribution
470 there. This power is priced so that it sells at cost plus normal profit shall we say.

471 In other words the slogan has always been power at cost. In terms of welfare economics, the idea behind
472 it is you come fairly close to maximizing the social welfare function if you sell at zero monopoly profits.
473 If the industry is an increasing cost, the maximization of welfare tends to have a fairly large element of
474 monopoly profit and balance consumer surplus. If it's a decreasing cost industry, the point at which you
475 maximize the consumer welfare function, or the overall welfare function, tends to be at a loss. So this is
476 why I say that you don't necessarily precisely maximize. But if you run it on the decreasing cost industry,
477 at this point of zero monopoly profits, you have a reasonable compromise without a budget problem. And
478 you come I think fairly close to, and you don't have to worry about the exchange rate between monopoly
479 profit and consumer surplus in terms of the utility. So that's the way we deal with consumers in Ontario.
480 We also do a lot of transactions across the border with the Americans. When we are trading with them,
481 we do it from the point of view of maximizing profits and here a competitive model has been set up under
482 circumstances where the model of perfect competition applies.

483 It's assumed that every machine on the combined systems that you're trading with is in competition with
484 every other machine. You look at the marginal machine. You compare the marginal cost in the two
485 systems. What's unique about the electricity business is that these are known. You know which is the
486 least efficient machine at all times and how much it's costing. Now if there is a difference of these two
487 costs, a trade takes place. Also, institutionalized in this is the price forming mechanism. It's the mean of
488 the two short run marginal costs. These are known at all times and the trade goes back and forth. And here
489 the market mechanism is used for two things: one to maximize profits; two to allocate the combined
490 resources most efficiently, in other words you're maximizing the gravy. And this works extremely well. It
491 works better if you have a fairly balanced situation on both sides of the border because if the trade is
492 imbalanced, then in effect the price doesn't matter. Now there are different kinds of trades. One of the
493 circumstances which is giving rise right now to a lot of difficulty is the fact that there are times when
494 there is surplus capacity in the Ontario Hydro system and there is none on the American systems. So their
495 short run marginal costs are infinity. This causes a pricing problem. It causes an imbalance in trade
496 because it tends to go one way, but it also causes a pricing problem because the standard formula calls for
497 finding the mean between some cost in Ontario Hydro and infinity which is the American cost. What do
498 you do with this?

499 So here you get into a pricing problem. But I suggest that in these things if you are attempting to
500 minimize cost, and sell at cost it's exactly analogous to trying to maximize profit. Which we do in the
501 domestic side on the international transactions; we maximize profit... and whether we're buying or

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502 selling, we're doing that. We sell when it's cheaper to sell. So there are savings in costs involve. We buy
503 when it's cheaper to buy than to produce. So there are savings involved there too.

504 **Audience:** [inaudible]

505 **Mr. Higgins:** What number? I don't know. I think the, I think there's a, I think this is capable of solution.
506 I don't have that number. I would think it's considerably higher than the numbers that will come out of
507 Annex B of the Treaty. I think gold is worth more than \$35 an ounce

508 **Audience:** [inaudible]

509 **Mr. Higgins:** Possibly a factor of 2 or 3.

510 **Audience:** [inaudible]

511 **Mr. Higgins:** Was it a function of their mentality or their ignorance?

512 **Audience:** Yeah, their whole approach to Canadian economic development in the continental framework.
513 Or is it simply they were ignorant of the implications in 1964?

514 **Mr. Higgins:** Well it's a pretty loaded question. I think it's a fair one though. I think if you look at the
515 House of Commons External Affairs Committee hearings, and you look especially for example at the
516 debate between Premier Lloyd of Saskatchewan, and Mr. Dinsdale who was the Conservative minister in
517 Ottawa, and Paul Martin who was the Liberal Minister who was doing these negotiations. Saskatchewan
518 raised a problem that they were concerned that the Treaty denied them the ability to take water out of the
519 Columbia and move it to Saskatchewan. Now here's an area in the Treaty which could result in a row
520 with United States. Now you would have thought that the approach by Ottawa would really be to
521 welcome any suggestions of any difficulties that might rise under any term of the Treaty. When you're
522 negotiating a contract and you go, suppose you're buying a house, you hire a lawyer. And what you hire
523 the lawyer for is to tell you what's wrong with the offer you're putting in, or the contract you make.

524 You don't hire him to tell you what a fine fellow you are, and how clever you are, and how do you pulled
525 the deal off. So that the governments of both BC and Ottawa really should have been welcoming any
526 suggestions of possible weaknesses in this Treaty. But if you read this correspondence to Premier Lloyd,
527 it's a putdown plain and simple. And it's a putdown really in very coarse and rude terms and I suggest
528 that this is the kind of mentality which one can argue. If you... and I think that there were some pretty
529 harsh things said and this is a tendency of people who have to make decisions. I think it's an
530 understandable tendency but nevertheless where you're making an important deal, I think you really have
531 to be on your guard and always look to see if you can find things that are wrong with it.

532 **Audience:** Well I mean on some issues, the Canadian government spent an incredible amount of time
533 discussing alternatives. For instance, the decision was made to implement a Medicare program.
534 Considering alternatives and they went through committees. Why were they so inflexible? I mean was it
535 because they didn't want to integrate themselves into the United States?

536 **Mr. Higgins:** Well I think the political philosophy, if you want, of the Pearson government was what they
537 call internationalists and I think the Columbia Treaty, as opposed to the Boundary Waters Treaty of 1909,
538 is a good example of this. What the International Joint Commission is, or was intended in the way it's

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539 operated, it's a body set up to resolve conflicts over boundary waters between these two countries. And it
540 has been in its time very, very successful in that respect. Now it's been more successful in resolving these
541 conflicts where boundary waters have been involved like the St. Lawrence. The reason why it's been
542 more successful in the St. Lawrence and Niagara are because of the way the interests that have to be
543 reconciled, and the compromises that have to be made. In the St. Lawrence for instance, there were really
544 4 groups that had to, that had conflicting interests. There were the navigation interests, there were the
545 power interests, there were the environmentalists, and there were the riparian owners, the people who
546 owned property along the bank. Now the way the alliances work, the power interests on both sides of the
547 boarder didn't want to be too circumscribed by the requirements of navigation, for instance.

548 The riparian owners had their position; they were concerned about such things as the speed limits of
549 vessels going through these things. The size of the waves that would come and erode their banks and
550 beaches and things like this, and as far as the power interests were concerned, they didn't want the pools
551 going up and down like yoyo's and neither did the navigation interests. But these tended to line up with
552 each other on both sides of the border and therefore the settlement of the issue was not on a nationalistic
553 basis. But how do you keep your environmentalists away from the throats of your power producers and so
554 on in each country. But as a result of that, the IJC built up a great deal of expertise in this kind of conflict
555 resolution and in a lot of cases, they were able to resolve much tougher ones than were the interests might
556 have been tilted Canada vs. US in more of a way. And there some like this that were solved.

557 The commission tended to divide on national line. But the commission could not cope in the Columbia
558 case with a situation where it was really entirely Canada vs. United States in all of the interests were
559 tended to be lined up there. The conflicts were relatively minor. There was a conflict in the United States
560 between the Bureau of the Interior and the Corps of Engineers. The Interior tend to jockey for funds and
561 they compete for them in Congress and the Department of the Interior were quite happy not to see Libby
562 built, but the Corps of Engineers were furious. And the way this Treaty, these negotiations went, at one
563 point, Libby was out. Now in Canada there were conflicts too, and these are the ones that received all the
564 attention. The conflict between Premier Bennett in particular and the Ottawa crowd in general. I think that
565 one could make an interesting comment. I've said that Premier Bennett really torpedoed the Treaty by his
566 decision that there would be no storage in the East Kootenay. I think if the Columbia were being
567 negotiated today, there has been an enormous change in standards. I think that if Premier Bennett said
568 there would be no dam in the East Kootenay today, including Libby, then my attitude would tend to be to
569 applaud that. And I think this would gain a great deal of support. What I think personally the tragedy was
570 that Libby was built. And the reason why I think this was a tragedy is not only the strategic thing, but the
571 flood control damages that Libby is really designed to prevent could only justify a structure of 20 million
572 bucks. Not Libby which even at that time the estimated costs were 251 million.

573 **Audience:** Were there many officials at that time... were they aware of the possibility of Libby being
574 built?

575 **Mr. Higgins:** Oh yeah, there had been an application to build Libby to the IJC in the early 1950's. There
576 were two applications. One was withdrawn because the application raised a lot of flack in the US. The
577 other one was never really disposed of until the Treaty was negotiated. The IJC spent a great deal of the

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578 whole of the year 1959 in negotiating some principles about and including among other things what to do
579 about transboundary projects like Libby. Now the Americans couldn't build Libby without our consent
580 and one of the extraordinary features of the Treaty and it found its way into the economic analysis of the
581 Treaty is that when, if we were going to deny the right to build Libby, and we were going to build
582 something else there, they asserted a claim for 275 thousand kilowatts of power. This has entered into the
583 government's economic analysis. And I simply can't understand what the basis of that claim is. Simply
584 because we took the view that we didn't want them to do something that required our position to do. Why
585 should we pay them for foregoing an exercise of a right that they didn't have? I don't understand that.

586 **Audience [Neil Swainson?]:** [inaudible]

587 **Mr. Higgins:** I think it would be very good if he did because Neil and I do not agree on this subject and I
588 think it would be a very good thing if you heard his side of the argument back to back with mine.

589 **Audience [Neil Swainson?]:** If this were to be done over again the type of agreement that ought to be
590 should be much more flexible. There's just no flexibility at all in the Columbia River Treaty. We were
591 committed to build three projects and it's very obvious the Americans weren't [inaudible]. Incidentally
592 all these men worked on the Treaty, none of these men would reproduce this experience again. It's
593 important to appreciate where this process came from because some of the senior advisors to the
594 government of British Columbia, men like Donald Stevenson on the IJC in 1959 never for a moment
595 thought we were going to get a Columbia River Treaty in the nature that we got. Relief came out of the
596 desire on the part of first of all two major federal governments to nail things down right for some for
597 different reasons, and the government was very keen to do this, was also very keen to get a developmental
598 project going even though it was going to be short term. Saw this and has to appreciate the magnitude as
599 Mr. Higgins's does. And the unemployment problem in the 1960's was our most acute recession year.
600 And they have some domestic pressure, still going with some domestic projects of their own which are
601 causing them some embarrassment. And indeed they also had a government that was keen to be
602 associated with an agreement which had a congressional and indeed with a presidential election coming
603 up. Indeed it tried to make a tribute and issued some rather fantastic statements in late October of 1960
604 describing the benefits of the Treaty.

605 I think even the government of British Columbia ultimately went along with the Treaty arrangement, well
606 it obviously did, not enthusiastically, I think it saw it as one way of getting Ottawa back. But any case,
607 Larrat, I'm completing the point of yours. I'm interested to your beginning comment on the pipeline
608 because I believe you're right here in drawing attention to the fact that you can't understand the sayings
609 unless you really have a feeling for the environment. The young people in this room don't remember this
610 at all, but you're quite right. And it so happens that some of the promoters were Americans. I don't
611 happen to agree with you that the consequence of this was a move towards continentalism. I think as far
612 as the Treaty is concerned, the consequence of this was a barring of any chance to apply a betting fort, as
613 which you well know, the economic committee endorses. In which the IJC ultimately rejected or denied.

614 **Mr. Higgins:** That's the one point on which General McNaughton and I had long arguments. I'm not sure
615 whether he'd ever agreed with me or not.

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616 **Audience [Neil Swainson?]:** It's fairly interesting. A man who was most articulate in Canada as a netter
617 of esteems who was of course a hydro man, and an operationalist. And I told one or two people in this
618 room about this. Stevens argued through '58 and all through '59. He never agreed to the negotiating. The
619 grossing method of one horse one rabbit principle, and they would boomerang, and indeed he could make
620 a case for the proposition that it did. In this sense, I happen to disagree with Larrat on the East Kootenay,
621 even in 1960 terms. Of course we all know about the whole thing about the arrangement now a few years
622 after the event. If a netting formula had been used when by 1962/63 this economy can emerge.

623 If both parties had been sharing the cost of the thing, it might have been possible to rework the agreement,
624 without jeopardizing the whole thing. But as it was, this economy was entirely bourn in Canada, and the
625 Canadian government I think for fairly good reasons ultimately decided not to sign the deal. But in any
626 case, we derive slightly different conclusions from the impact of the pipeline. One really doesn't
627 appreciate the decision making in the years 59/60 unless one keeps that in mind. The argument in which
628 the government of British Columbia used, and incidentally this is the government insisted upon grossing
629 ultimately be accepted, was that, notwithstanding the case you made in economics, it was really
630 unanswerable for now, in view of the public perspective of promotional ethics. The difficulties associated
631 with different interest rates in the two countries, in view of the buy-American Act, in view of the
632 difficulty involved in asking Canadian taxpayers to pay part of the cost of American projects which would
633 be continuing perhaps to produce an American benefit in the United States after the Treaty was over.
634 Difficulties in estimated costs, difficulties in having one level of government help meet the displacement
635 costs of people in another country. The whole series of very typematic calculations. The provincial people
636 simply said, whatever the logic, if we tried to let the thing in this province be a non starter.

637 I think I was telling someone Wednesday night that, we better let go of that interpretation maybe, and I do
638 find it regrettable. I think it gives a pretty accurate reading of the mood and temper of this province at that
639 time. However, let me quickly scoot on because I'm sure I caught Larrat off guard. You referred towards
640 the end of your presentation to flood control benefit as a sort of benefit in perpetuity. I know what you're
641 referring to here. I don't know whether your audience does. Mr. Higgins is referring to the fact that there
642 is not a continuing flood control benefit payable to Canada for example after 60 years.

643 The IJC principles did not give the negotiators really any guidance on this. They're simply not clear. And
644 the negotiators didn't get that. But if you check with the record as I have, you will find that, the reasoning
645 of the Americans is rather interesting, and in some respect understandable. What they in effect said, what
646 they did say in one of the negotiating sessions in 1961 was this, they said now look. We can't persuade
647 the US Congress to allocate to our storage projects flood control in perpetuity. They'll allow us to credit a
648 project in storage benefit until we've amortised its cost. Now they said, how can you persuade us that we
649 should pay you a flood control benefit simply because the project is in your country as opposed to ours.
650 Because remember they said what we're really debating here is storage regulation effective via a
651 Canadian project as opposed to regulation admittedly more expensively. In an imbalanced system we
652 could put it on our side of the line. The other thing to keep in mind, and I always refer to this when I hear
653 the phrase perpetuity, the clause in the Treaty actually says to the limit of existing facilities, what we have
654 done to commit ourselves until the Treaty ends in 60 years, to continue to meet American calls for flood
655 control.

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656 The Americans have to utilize all of the facilities which they have in the basin, Treaty and non-Treaty
657 first. We have agreed to continue on the post Treaty period to meet these calls. The Americans have
658 committed themselves to meet our operating costs, and to recompense us or anyone else which will suffer
659 in terms of power or cash. So our losses are made good but we do not get continuing flood payment.
660 There is a clause in the Treaty which says to the limit of existing facilities. I think its meaning is often
661 over looked because there are many of you who say we're committed forever, for example to keep the
662 High Arrow operation to provide a flood control benefit. Actual fact, you know that after the Treaty, any
663 facility constructed under the Treaty is no longer of utility to us; we're quite entitled to open diversion
664 tunnels again. So we're not committed to maintain facilities in Canada simply to endow a benefit on our
665 friends in the south of us if it's not going to be useful to us. Let me say one other word there. Here I'm
666 just referring to that when I do stop. You referred in your formal presentation to that paper by Dr.
667 Keenleyside. And the audience I think ought to ask Dr. Keenleyside about that when he comes. I think
668 there is a misunderstanding here about what he was trying to say. Because I have read verbatim the record
669 of the negotiations and the record of the meetings of the working groups through the summer and fall of
670 1963 when the power sale was being negotiated and I can assure you that the Canadian negotiators federal
671 and provincial, and the staff men on the hydro tower here, that prepared so many of the assessments
672 which were utilized by the negotiating team in the power sale exchanges. I can assure you that these men
673 right throughout this period were seeking to maximize our return and were operating under the basis of
674 their estimates of what the downstream benefit was. Just as the American's of course were bartering
675 on price, we're operating on the basis of their estimates of what the downstream benefits was in terms of
676 hundreds of millions.

677 What Hugh Keenleyside was simply referring to was the fact that... indirectly these figures remained
678 upper most in the minds of the Canadian personnel right to the end. But far along the negotiations, it
679 became fairly obvious that there was a fundamental disagreement between the Canadian and American
680 negotiators as to the number of kilowatt hours that the downstream power that were to be produced in the
681 future. As you all know, as the Treaty stood, and stands is a function of many things including load
682 growth build up in the States and so on. Here they were trying to assess the rate in which the American
683 system would advance in the 60's and 70's and 80's and after all this is a matter of conjecture. A working
684 group of technicians to wrestle with the problem further, and the working group ultimately came to a
685 deadlock. The Canadians saying we think it's going to be this order of magnitude, and the Americans
686 saying this order of magnitude. Then the question was how do you reconcile?

687 There really wasn't a way you could reconcile in terms of saying we're dead certain that one is right and
688 one is wrong. But you know by this time, they had pushed themselves using estimates of the actual
689 magnitude they had found in dollar terms. But you see what I'm trying to say here, and what I think Dr.
690 Keenleyside will say when he comes is that while it was true that the Canadians did say, you know there
691 is no way we can logically reconcile this. Let's talk about the fact that we're selling you a service. There
692 is certainly no reason that to think that all of a sudden the Canadian's gave up on the magnitude of what
693 they were selling to focus their attention on the cost to be gained.

694 **Mr. Higgins:** This is a very tough element. What my accusation I guess to the Canadian negotiators, if
695 you want to put it in very, very simple terms, maybe they should have stood back and looked at the whole

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696 picture. I know at that time I was just as guilty as everybody else in getting this fixation on power
697 benefits... and concentrating on the measurable benefits. Anything you can measure or you can get a
698 handle on is much easier to do than something you can't get a handle on.

699 And I think the main sort of non-coincidence of wavelengths between the Canadians and the Americans
700 were that the Canadians, including me, I plead guilty to this, got mesmerized by power because during
701 that time in the late 50's and the early 60's, the principle value of water flow was the energy content. Now
702 in these simple terms, if the thesis said storage declines over time is correct, then what you would expect
703 to be able to do is look around the world and see storages being dismantled and benefits had declined over
704 time. You don't see that anywhere. You see storage is being built everywhere. As development proceeds,
705 there is a demand for control over nature. I can only conclude from this, in this simplistic level if you will,
706 but I think that it's valid. As development proceeds, you get more storage, and from that, it's implicit that
707 the value of storage must rise over time. What we had seen in the late 60's and to date is a real revolution
708 in the attitudes towards wilderness and the non power values of rivers. A wild river is now a scarce
709 commodity. We discovered some new hookers in the Arrow Lakes last summer when the water level was
710 very, very low and the winds blew up and down the valley and inundated Revelstoke with dust. This was
711 a totally unforeseen cost. It's a social cost that would have been really no way of predicting this that that
712 would have been the effect. And the intangible costs, the ones you can't really get a handle on and this is
713 particularly true I guess of the East Kootenay have escalated enormously in value.

714 The other thing the Americans were looking at in terms of the Columbia Treaty was I think the notion that
715 flood control, which was important, and the water itself. One of their principle objectives in this was to
716 prevent us from doing diversions... especially diversions out in the basin. Things were starting to change
717 then. The initial idea was that we would postulate a diversion to the Fraser. I think this was really the
718 creation of an alternative use for Canada, of 15 million acre feet on the Columbia which would be
719 captured from nature. And one of the things we said we could do with it was to divert it down the Fraser
720 River. And we probably could have done that if we could have ever got the dams built on the Fraser.
721 Later on the possibility of diverting it to the Prairies became the more dominant of the two. Now the
722 Columbia diversion from out of either Mica Creek or Bull-River-Luxor to the Prairies ultimately the
723 South Saskatchewan River was one of the more expensive diversions. But it was a smaller scale
724 diversion, and therefore would have been a candidate for one of the earlier diversions. The economic
725 studies that were done on the diversion to the Fraser were sort of pooh-pooed on cost grounds because
726 the assumption was at least that the financing would be private and high interest rates were used. So there
727 was an effort made in Canada by Canadian's to downgrade that.

728 Now basically what we were looking for was an alternative use for this water, as a means to try to
729 establish its value to us and that in turn became a bargaining tool in speaking to the Americans. Say okay,
730 we've got an option. This option has a value, and this is one of the ways of estimating that value. I believe
731 this conflict on the value of storage in terms of honest intellectual strife is a tough one because Krutilla's
732 case that he makes in chapter 3 of his book on the Columbia River Treaty is very eloquently stated.
733 There's one portion of it that I think is totally without foundation and this is the portion where he argues
734 that if we let Canada build the first added storages, this will deprive the Americans of an opportunity to
735 build the last added storages. And therefore he argues the terms of giving Canada half of the benefits as

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736 calculated per Annex B is equivalent to double the net cost to the United States of the benefits obtainable
737 if theirs goes on the very end. I find this a peculiar argument. In one sense I believe that the reason that
738 the Americans wanted to buy Canadian storage is because they wanted first of all, I guess, to buy time to
739 reconcile the conflict over the Hells Canyon development on the Snake River which hasn't been resolved
740 yet, and as time goes on and attitudes change, the value of it as a wild river is escalating and I don't really
741 think they have this alternative. So I think Krutilla was really talking about things which even at that time
742 are non alternatives, and in this day and age are certainly non alternatives.

743 One other aspect that worries me about the Columbia Treaty and flood control provisions and this is the
744 fact that the Columbia flood plain will be encroached upon and I suspect that unless the Americans
745 exercise zoning control on construction in that flood plain that with a feeling of safety that may exist or
746 may grow, particularly after we will have averted one or two potentially very serious floods, that a feeling
747 of safety will grow and that foolish and improvident development in this flood plain will occur. Then
748 someday, nobody know when, we'll get the 10 thousand year, or 100 thousand year or the maximum
749 flood and there will be a catastrophe. And if Canada makes the slightest operating error, or even if it
750 doesn't, there may be a reaction and it may not be a rational reaction but politically, opinions become
751 facts and we could be held to blame in the popular mind, for not having done what we could not do. This
752 happens in politics. And I think I would have really liked to have seen some undertaking by the United
753 States on its own if you want to limit the control in the flood plain. And that's one of the things that
754 worries me about this article where we undertake to operate all storages to the limit.

755 In the Arrow Lakes case, if we decide to reclaim the Arrow Lakes Valley and sort of re-establish it, which
756 would be quite a chore, by opening the diversion tunnels at the High Arrow Dam, we have a debate on
757 whether that was a facility or not. We'd have to really remove the dam in order to dispose of that debate.

758 **Audience [Tim Newton?]:** You mentioned the possibility of calculating the downstream benefits using
759 other than the concept of firm power and peaking capacity. I find it a difficult concept to start with and
760 then you tell me then there is a more difficult way of calculating it to coordinate with nuclear power. I've
761 sort of got three questions along this line: A) Was this appreciated by the advisors to the negotiators at the
762 time of the Treaty? Was it appreciated by the negotiators of the Treaty, and we heard it was very
763 hardnosed negotiating, if it had been brought up at the time of the negotiations, would it not have been
764 traded against something else that we did in fact get?

765 **Mr. Higgins:** I think that certainly some of the advisors who were involved were aware of these things
766 and the way of doing it. What we would have had to have done really would have been to have hired a
767 full time staff of system planners who would then have to continually redesign the US system on the
768 assumption that there was no Canadian storage. This is not an impossible task but it's difficult because it
769 really means predicting the judgments that American planners would have made in the absence of
770 Canadian storage. I think this can be done. I think that it would be subject to controversy. I suppose that
771 to incorporate such a thing in the Treaty might have been difficult in the sense that we would have been
772 involved in something that the United States considers United States business. However, and I think that
773 would have been kind of unfortunate, but as the Treaty is arranged anyway, each side has to be in the
774 other side's pocket or bedroom as you will to a very great degree. I think this is one of the unfortunate

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775 things about the Treaty. The degree of integration that there is and looking at the system. If you could
776 work this with a series of ongoing deals which could be negotiated then I believe it would have been
777 better, and if you would have had options on where to put the storage and shifting storage about, or if the
778 deal were done in terms of the transaction just looked at in terms of the transaction at the boundary. Not
779 to worry about how Canada plans its system.

780 The United States treaty with Mexico of 1944 embodies this kind of principle where they set up a
781 commission. But the options are left open about what to develop, and when. And so it's set up really as a
782 continuing series of decisions which are all conditional on how things come out. And with Canada having
783 done the Peace River development I think this had an enormous impact on the Columbia as Neil
784 Swainson has said. I believe the Canadian reaction was wrong, but I think he's quite right that we were
785 obsessed with the unemployment situation and other frivolous things. And we were obsessed with the fact
786 that Arrow would be first added because we could get it built faster than we could build Mica, but as a
787 last added project Arrow is trivial. It would, at a cost of 66 million dollars, which is when I did the
788 analysis of it, I found that it would pay its own way, but not much more. It didn't matter really whether it
789 was in or out. There were alternatives to it.

790 I think one of the alternatives would be a transmission line behind the mountain and an interconnection
791 agreement. I would have liked to have seen personally a situation because of the Peace you have the
792 delay, you build Mica Creek, and if you want to machine Mica, then you make decisions at stages about
793 what to do. You negotiate about how much storage you'll commit at various times. I think this is a kind of
794 approach. For one thing; it wouldn't have involved Ottawa doing all of BC Electric's or BC Hydro's
795 system expansion program for such a long period of time. And I think this is one of the root causes of
796 conflict within Canada. That Ottawa was cramming so many ideas down BC's throat. And the treatment
797 of Premier Lloyd on the diversion rights possibility. Paul Martin wrote to him and Dinsdale wrote to him
798 said well we think from an economic point of view, we think this is sheer nonsense. Well in the Waterton
799 Belly case, the Canadians tried that on the Americans at what the Americans were planning to do, and so
800 the Canadians sailed down to the States and said well that's a crack pot engineering idea, it will never be
801 economic. And the Americans I think quite properly replied. The economics of it are absolutely none of
802 your business. They're our business. What we want to do, if we decide to do that, we're asserting that
803 we've got the right to do it. And they may have even said if we feel like putting a man on the moon for a
804 hundred billion dollars, by God that's what we're going to do. We've got the right to it, and you've got no
805 right to tell us that it's not an economic proposition. So I think there's a bit of this in the relationships in
806 the way Ottawa treated both British Columbia and Saskatchewan in a paternalistic kind of way.
807 Saskatchewan was concerned with the ability to exercise a right, now if economics don't work out, you
808 can always not exercise it, but if the ability to exercise that right is removed, then even, no matter how
809 good the economics are, you can't exercise the right.

810 **Audience [Tim Newton?]:** If I could repeat the last part of the question then...

811 **Mr. Higgins:** That's the part I didn't answer?

812 **Audience [Tim Newton?]:** At the time of the Treaty, I heard from other speakers that it was indeed a
813 very hardnosed set of negotiations and there was quite a lot of poker playing by both sides. The feeling

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814 has been in fact that we got from a large number of speakers that we got as much as we could have
815 considering the circumstances. And if you were to come up with the concept of evaluating downstream
816 benefits in a different way which would not have decreased with time, in fact would not even have been
817 properly defined at the time, do you not feel that we would have to pay a price in some other area during
818 the negotiation?

819 **Mr. Higgins:** No I don't think so. As a matter of fact I made the assertion at the time. As early as 1958
820 that downstream benefits increase over time. I'm sure that some of the negotiators did this. I'm not
821 impressed with the argument that the negotiators did their damndest. All negotiators do their damndest.
822 I'm just saying that the result wasn't good enough. If they tried it's a reflection on their ability perhaps. I
823 tend to be very harsh in my judgement there. It's like if you have a dumb but willing student, who works
824 very, very hard to produce mediocre results, those don't entitle him to an A plus. Well I'm afraid that's
825 the accusation that I make, that there could have been a better result. Now we can't, you've forced me
826 into a crying over spilt milk kind of thing. I think in practice a large proportion of the Columbia Treaty
827 we have made decisions that could have been, and we made a deal in some respects may have been
828 unintelligent. I don't believe that where Canada has exercised bad judgement in going into a contract, I
829 don't think this is something we're automatically entitled to remedy for.

830 I think that in areas where there may have been a misunderstanding or the theory may have not
831 corresponded with reality, I think there is a case for opening it, and in particular on this case of declining
832 benefits from storage. I believe that that is wrong. I believe that given the circumstances, we'd have quite
833 a time convincing the United States that it's wrong, but I think before we start doing that, we need to
834 convince ourselves pretty thoroughly that it's wrong.

835 **Audience:** The fact that there was a basic disagreement between the Canadian and US people on this
836 point seems to me that when the 30 years sales period is over, since this wasn't resolved, hasn't been
837 resolved now, it could be looked at and possibly your theory of increasing storage could be...

838 **Mr. Higgins:** There is no mechanism within the Treaty whereby it can be looked at. Now it's possible
839 that at the end of 60 years, in other words in the year 2024 that we terminate the Columbia River Treaty
840 and then renegotiate. Well we sold our benefits for 30 years, so when the year 2000 whatever comes
841 along, we're going to have to come together with the US at that point and decide.

842 **Audience [Doug Forrest?]:** Are there benefits from now on or aren't there and if there are, then we'll
843 have to work out a method of calculating. I don't see why that couldn't be resolved at that point, and if
844 there is really a benefit for Canadian storage, then Canadians should be able to make that point then.

845 **Mr. Higgins:** Well it depends, that's true it, they'll be able to do this. Now we would probably have to
846 threaten to not operate any of our storage, but the Americans might easily say then, ok, we won't pay
847 anything. So we dismantle High Arrow. They lose a little bit of power at Grand Coulee. We operate Mica
848 the way we see fit. They're going to get some benefit and their argument will be okay this is just a by-
849 product of your operation, if you had the ocean at the border instead of the border you would modify the
850 flows as they go into the sea so we say fine, no deal, let's not even talk. So I think the leverage that we
851 had in the 1960's was that these things were not built. I don't know what the... I think the real benefits of

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852 this storage to the United States at the end of 60 years will be very, very substantial, but whether we'll be
853 able to capture them I don't know.

854 **Audience:** Say we're not going to operate our projects and their benefits will be substantially less.

855 **Mr. Higgins:** We will have to operate Mica Creek and Revelstoke Canyon. We don't know yet whether
856 it's going to be at Downey Creek. And as we modify those as we operate those, and this would be an
857 argument that the downstream power benefits decrease. The overall benefits of this storage to the basin as
858 a whole will increase.

859 **Audience:** What do you think the chances are politically that one could suggest to the Americans to have
860 a look at the Treaty? Because surely it's a two way proposition? Sort of the only reason the Americans
861 went into a Treaty was precisely because it was a Treaty. And really your criticism is that there was no
862 provision in the Treaty for some periodic review. That's your criticism.

863 **Mr. Higgins:** Essentially that's it.

864 **Audience:** Well that wasn't done. And we can't turn around and go back, wind back the clock and start
865 over again.

866 **Mr. Higgins:** No I think what they can do is if they can agree they didn't calculate what the benefits were
867 properly. In other words if you say there are limits to Krutilla's theory, but only if you can put it to them
868 that it would be to their benefit too. And in what way could it be shown to their benefit to reopen. Well,
869 they would be, their indication would be that, ok it's a contract that's it. Now the basis on which it would
870 be reopened would be if this is causing an irritant to Canada. They have not hesitated to tell us about what
871 we're doing that's irritating to them, and it would be on that level basically that the discussions would
872 have to commence.

873 **Audience:** So it would be in a complex far broader than the Columbia?

874 **Mr. Higgins:** That's right. If it were done right now, it would be in the context of these irritants. One of
875 which is the Autopact which has the, which is interesting because it was negotiated at the same time by
876 the same man... in other words, this is Paul Martin's other little project at the time. The Americans are
877 unhappy with the way the Autopact has turned out. And they're pressing for reopening of it, the removal
878 of Canadian safe-guards.

879 **Audience:** We'd have to do a deal.

880 **Mr. Higgins:** We'd have to do a deal that's right. But the problem is we can't even agree whether or not
881 it's to our advantage or to our disadvantage. We've had a lot of difficulty in Canada agreeing. There's
882 still a wide spectrum of opinion. When you hear from Dr. Keenleyside you will get a very, very different
883 view of the Treaty from what I'm giving. That's why I think this is a valuable series. I'm only sorry that
884 it's taking place in Simon Fraser and not in Toronto.

885 **Audience:** [inaudible]

886 **Mr. Higgins:** Oh well the international law between Canada and the US prior to the negotiation of the
887 Columbia was governed by a Treaty we made with the Americans in 1909. And that Treaty has an article
888 called article 2 in it dealing with the right of states ... of the upstream state to use the water in its own

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889 territory by diversion. The other thing that this article says, it says that the upstream state can do this. It
890 can divert water, and not let it flow into the other state. The other part of that article says if the upstream
891 state exercises its right, then an injured party in the downstream state who's injured by this diversion has
892 the right to sue in the court having jurisdiction at the point where the diversion took place. Now this is a
893 dilution of the first part of the thing and the first part of it was called the Harmon Doctrine. And the
894 United States have done this kind of thing. If you look at a map of the United States and look at the mouth
895 of the Colorado River, you will see something running along the border into the Salton Sea called the All-
896 American Canal. And what the All-American Canal does, it converts the Colorado River from a US-
897 Mexican river to an all American river. And what the Mexicans get out of it, is a bunch of briny water at
898 this juncture. So the law stated in this Treaty has these two provisions. One that the Canada can divert the
899 Columbia to anywhere it wants, and secondly that the American, any American that's injured can bring a
900 law suit. Now the difficulty of this, on the surface it looks very simple and clear and straightforward, the
901 difficulty is that there's never been a case arise out of this. So you don't really know how the courts
902 would rule. This has been argued by lawyers and there are some fascinating articles on it. One by Jacob
903 Austin who is now deputy minister of energy, mines and resources in the Canadian bar review of
904 September either '57 or '58. Do you remember when it was Neil?

905 **Neil Swainson:** '58 or '59.

906 **Mr. Higgins:** There's that article, and in the same issue there's one by Charles Borne, which talks
907 specifically about the application of this law to the case of the Columbia. And the other thing about the
908 international, sorry the Boundary Waters Treaty is that the principle which it contains generally speaking,
909 doesn't apply elsewhere in the world. The whole law elsewhere in the world is such a mish-mash of
910 special cases that it's very hard to determine whether there is an overriding principle or not. Now there
911 has been an effort to try to legislate, if you want, some kind of international law which won't really sort of
912 penalize one party or the other.

913 See the reverse to the Harmon Doctrine is the Doctrine of Riparian Rights. And this says okay a sovereign
914 nation has a right to receive the natural flows of the river and nobody can meddle with it upstream. So just
915 a conflict situation. Now to try and resolve this, they've, a lot of writers have come up with an idea called
916 equitable apportionment. And this is great. The only snag with it is that it's impossible to define. If you
917 could define what equitable apportionment was... suppose you applied equitable apportionment to the
918 Columbia. And you look at it and say ok, under the Boundary Waters Treaty of 1909, Canada has the
919 right to divert this to the Fraser or to the Prairies and you can put an, if you move to equitable
920 apportionment, one of the things Canada must contribute to that in the case of the Columbia is to give up
921 this right to divert. But how do you equitably apportion the thing, on the basis of population? This would
922 give the US 9/10 of it and Canada 1/10 on the basis in the area in the thing. It means different things to
923 different people. And this is the snag there.

924 **Audience:** [inaudible]

925 **Mr. Higgins:** Beg your pardon?

926 **Audience:** [inaudible]

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927 **Mr. Higgins:** To Canada. This is one measure of the thing but in that study of the diversion to the Fraser,
928 this is predicated on our having the right to capture flows from the Columbia and divert them out of the
929 basin into the Fraser. Under equitable apportionment we wouldn't have that right. So the value to Canada,
930 you don't know what it would be. Would it be half of that because this is presumably somewhere between
931 the Harmon Doctrine, which is the absolute rights of the upstream state and the Riparian Doctrine which
932 is the absolute rights of the downstream state. Equitable apportionment is let's do it on the basis of
933 motherhood. Motherhood is a good thing in that sense, the more modern sense of course, it's been
934 controversial too.

935 **Chair:** Well the hour grows late and I think it might be appropriate now for us to call this evening to a
936 halt.