

If that same water goes through the larger head on the main stream of the Columbia it would actually produce more power, and because it produces more power presumably any damages in connection with the Kootenay could be arranged within Canada.

The main reason for the next dam I shall discuss is to compensate the west Kootenay for a reduction in flows arising out of diversion. I refer to the Duncan lake dam. What happens in summertime is that the flows are very large and there is a tremendous amount of spill on the west Kootenay which in any event is underdeveloped in that, with the capacity installed there at present, it is not quite enough to take advantage of the average flows that exist in nature.

But you get the large part of the flow in the four months of summer. What has to be made up from the diversion is just the natural flow at the border, or at the Dorr site on the Kootenay, in the low flow months.

Now, a very large proportion of this can be made up by building storage on Duncan lake with 1.4 million acre feet. A Duncan lake dam, would serve the purpose of capturing these flows in the spring which are normally wasted, and deliver them to the west Kootenay plants in order to compensate the west Kootenay plants for the loss of water from the Kootenay. And the Duncan lake dam by itself very nearly does this, so that the Duncan lake dam is again related to what has been variously called the Canadian plan, sequence IXa, the McNaughton plan, or the full diversion plan. I myself believe that it was included in the other plans largely because it provided a little bit extra storage, although it did not have a very vital function, and I do not believe that in the treaty it has a very vital function, if you regard it as being added after Libby.

It is a more necessary element in the diversion plan for reasons within Canada than it is in a non-diversion plan having regard to large storage on the upper Kootenay at Libby.

Now, the other dam which enters into your deliberations here is the High Arrow dam. This dam is located just above the border with the United States. It has possibly 77 feet of head which could be developed in Canada. But the major benefit from this High Arrow storage accrues in the United States.

One of the arguments in favour of High Arrow is that it is necessary to re-regulate the flows and discharges from Mica creek after Mica creek has been machined, and then by some rather tortuous logic, that this Arrow lake dam should be built immediately so that it will be available to re-regulate the discharge from Mica creek when needed. If Mica creek is not machined, then of course this problem does not arise because Mica creek can be closed off virtually completely during the high flow period, and opened up during the low flow period.

In other words, Mica creek can be overregulated at site. With unregulated inflows below Mica creek, and you will get something approximating a smooth flow further downstream. But after Mica creek is machined, there is a desire to maintain the elevation at Mica creek as high as possible on average; and there is also the necessity to maintain relatively even and smooth discharge from Mica creek.

The discharge from Mica creek to meet Canadian load would be delivered so that it would be regulated by the flows at a point or centre of gravity of power in Canada on the Columbia downstream, and would generate approximately what the Canadian load requires.

This would mean that instead of overregulating with Mica, to produce smooth flows at Arrow lakes, or near the boundary the Mica creek operation would change when generation is installed there and at Downie creek and Revelstoke, so that there would be relatively smooth flow of Downie creek