Report By: B.C. Engineering Company Ltd.

Report For: Department of Northern Affairs and National Resources.

Title and Date: Report on An Investigation of Columbia to Fraser River Diversion Project, 1956.

Specifications and Criteria for the Study

The Department of Northern Affairs and National Resources commissioned the B. C. Engineering Company Ltd. on 14 June 1955 to undertake a study of possible diversions of water from the Columbia River to the Fraser River basin. The contract specifications for the study stated in part as follows:

> "To carry out an engineering investigation concerning the diversion of 10,000,000 acre-feet of water from the Columbia River system by way of what is known as the Eagle Pass diversion route which is the subject of a reconnaissance report by Water Resources Division dated May 16, 1955, and to further investigate and determine how and to what extent the Fraser River System could be economically developed with the addition of the diverted water in conformity with the recommendations made and the conclusions arrived at in the reconnaissance reports of B. C. Engineering Company dated March and April 1955.
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> To provide a complete engineering report thereon".

During initial talks between representatives of the B. C. Electric Company, the B. C. Engineering Company, the Canadian Section of the International Joint Commission, the Department of Fisheries and the Department of Northern Affairs and National Resources it was agreed that the height of the dams to be considered in the study would be limited to a maximum of 100 feet in order not to create excessive barriers to fish migration. This restriction made it possible to avoid costly relocation of extensive reaches of the two trans-continental railways, and to some extent, of the Trans-Canada Highway, all of which follow the valleys of the Thompson and Fraser Rivers. Fish ladders and other fish facilities were incorporated in the various structures in accordance with requirements specified by the Department of Fisheries. The estimated construction cost of these facilities is $308,000,000 and water equivalent to 85,000 kw. of power would be required to service them during the migrating season.

It was also agreed at these initial talks to undertake the study on the basis of an annual diversion of 10,000,000 acre-feet from the Columbia River with the understanding that this assumed rate of diversion could be adjusted later if necessary. Regulation studies carried out in 1956 indicated that with full diversion of the Kootenay River at Canal Flats