

APPENDIX H

WATER RESOURCES IN ALASKA ^{1/}

It is my understanding that a decision to include an appraisal of water resources in the objectives of the North Pacific Planning Project did not take very definite form until May of this year or not long prior thereto. Although undertaken after many other objectives were being appraised, I believe that representatives of Canada and the United States are trying earnestly to make up for lost time.

It is encouraging to know, from Mr. Wardle's discussion, that tangible progress has been made in Canada. Thus far, progress, so far as the United States is concerned, has been largely in the way of inventorying information already available and laying plans for the future.

It seems to me that water-resources investigations in the North Pacific area should be segregated into two categories: 1, potentialities; and 2, hazards or limitations imposed by the behavior of surface- and ground-water sources of supplies, particularly in the regions of permanently frozen ground.

The potentialities are located primarily along the southwestern coast of Alaska and along the coastline of British Columbia. Those areas are included within one of the important water-power concentrations in the world. That concentration embraces not only the North Pacific coastline but also most of British Columbia and most of the Pacific Northwest in the United States; and includes perhaps 5 or 6 per cent of the water power of the world. It is located within easy transmission distance of excellent harbors, it is well supplied with raw materials, and the climate is credited with being highly favorable to human accomplishment. In contrast, most of the other regions of high water-power concentration in the world are located in the tropics, far removed from the facilities of ocean transportation, where dense tropical jungles interfere with development and where the climatic conditions are least favorable to human accomplishment. Africa, with nearly 40 per cent of the water power of the world, makes the least use of it. The most recent information available indicates that less water power has been developed in Africa than in British Columbia. I believe it is desirable, therefore, to present as clear a picture as possible, with existing information, of the water-power possibilities of the North Pacific Planning Project.

An important consideration to be borne in mind is that the water-power potentialities of the North Pacific Planning Project are apt to increase as more information is obtained. In the parts of British Columbia which have been studied most intensively, and in the Northwestern States of the United

^{1/} Abstract of remarks made by Glenn L. Parker, Chief Hydraulic Engineer, United States Geological Survey, United States Department of the Interior.

States, the accumulation of water data during the past 30 years has more than doubled the recognized potentialities.

The hazards or limitations imposed by frozen ground, ice, and lack of water deserve equal attention because adequacy of water supplies in much of the interior country will be a determining factor in industrial growth and in the population that can be expected to remain in that area perennially. The scarcity of water for industrial and domestic purposes and for maintaining satisfactory sanitary conditions within the regions of permanently frozen ground is becoming recognized through problems encountered in building the Alaskan Highway and in establishing military and air bases in Alaska. Very little is known about the occurrence and behavior of water in such regions.

Recently, upon request by General Worsham of the Northwest Division of the Army Engineers, Edmonton, Alberta, Dr. C. V. Theis of the Geological Survey has been detailed to investigate the water problems along the Alaskan Highway. He reported for duty at Edmonton in the middle of October and at present is making a trip along the Highway. As he is a ground-water expert, his observations and conclusions will probably afford a dependable guide for planning investigational activities in the North Pacific area.

Plans made thus far by the United States Geological Survey for water-resources investigations in Alaska contemplate the establishment of at least three year-around district offices—one in southeastern Alaska, probably at Juneau; one in the Yukon-Tanana area, probably at Fairbanks; and another one down the Lower Yukon, perhaps at St. Michael. Year-around observations and records will be necessary because during the winter time the ground-water and surface-water supplies are at a minimum and the difficulties with ice and frost are most severe.

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