

REPORT OF THE INTERNATIONAL JOINT COMMISSION
ON AN
INTERNATIONAL PASSAMAQUODDY TIDAL POWER PROJECT

Under date of November 9, 1948, the Governments of the United States and Canada, by a formal Reference bearing that date, submitted to the International Joint Commission the following matters relating to the International Passamaquoddy Tidal Power Project, Maine-New Brunswick:

" In accordance with Article IX of the Boundary Waters Treaty of January 11, 1909, the Governments of Canada and the United States have agreed to refer to the International Joint Commission the following matters for joint examination and advisory report, including recommendations and conclusions:

"1. To review existing plans for the construction of hydro-electric power plants at Passamaquoddy and Cobscook Bays, arms of the Bay of Fundy, which are located at the mouth of the St. Croix River, a boundary stream between the State of Maine and the Province of New Brunswick.

"2. To report on the scope of the investigation that would be necessary, together with the estimated cost thereof, to enable the Commission to report whether any of these or other plans for using these waters is practicable, and is desirable from the point of view of public convenience and necessity.

"3. To report its recommendations as to the basis on which the costs of the investigation shall be apportioned to each country.

"In the conduct of its examination, and otherwise in the performance of its duties under the Reference, the International Joint Commission may utilize such information and technical data as have been acquired by the technical agencies of either Government or which may become available during the course of the investigation, thus avoiding duplication of effort and unnecessary expense."

Following the receipt of this Reference the Commission created the International Passamaquoddy Engineering Board to assist with the technical work necessary under the terms of the Reference. The Board is composed of two United States members and two Canadian members. The United States members are Mr. E. Robert de Luccia, Chief, Bureau of Power, Federal Power Commission, Washington, D.C., Chairman of the United States section, and Brigadier General J. S. Bragdon, Deputy Chief of Engineers, Department of the Army, Washington, D.C., who succeeded Major General R. C. Crawford in November 1949; and the Canadian members are Mr. Norman Marr, Chief of Water Resources Division, Department of Resources and Development, Ottawa, Ontario, Chairman of the Canadian section and Mr. F. S. Lazier, Toronto, Ontario, Consulting Engineer to the Department of Public Works of Canada.

On June 23, 1949, the Congress of the United States appropriated \$30,000 to match an equal amount made available by the Canadian Government in the discharge of its responsibilities under the Reference.

In carrying out its assignment under the direction of the Commission, the Board instituted a programme of field investigations

and office studies to be made in the summer of 1949, and in company with members of the Commission, inspected the Passamaquoddy area in August of that year. The Commission, with the Board members present, held public hearings in St. Andrews, New Brunswick, and in Eastport, Maine, on August 19, 1949, and August 22, 1949, respectively. The hearings were attended by members of Parliament, members of Congress, governmental officials, representatives of industry and civic organizations, and interested citizens. During the course of the St. Andrews hearing, it developed that the fisheries interests of New Brunswick were concerned as to the possible serious adverse effects which the works contemplated at Passamaquoddy might have on the fisheries in the Bay of Fundy and adjacent waters which are of great economic importance to the people of New Brunswick and Nova Scotia.

On March 17, 1950, the International Passamaquoddy Engineering Board submitted a report to the Commission, which report is attached hereto and is made a part of this report of the Commission to the Governments of the United States and of Canada.

The Board's Report includes a review of existing plans and past investigations relating to tidal power possibilities at and in the vicinity of Passamaquoddy Bay; and a description of the scope and an estimate of the cost of the investigation conceived by the Board to be necessary "to enable the Commission to report whether any of these or other plans for using these waters is practicable, and ^{is} desirable from the point of view of public convenience and necessity."

For convenience of reference and comparison, the Board also includes in its report an appendix on tidal power projects and

history which gives an outline of the more important projects of this character in other parts of the world which have been proposed.

The Board expresses the view (para 13) that "the International Passamaquoddy Tidal Power Development can be physically engineered, constructed and operated," and the Board goes on to say "However, information now available is not adequate to permit determination of its economic feasibility."

In Part III of its Report, the Board sets forth comprehensively the scope of the investigations which in its opinion would be necessary to determine the physical and economic feasibility and desirability of any plan for Passamaquoddy tidal power development, and estimates the cost of these investigations at \$3,900,000; this amount includes the sum of \$300,000 for an investigation to extend over 3 years which has been determined by the Canadian and American fisheries authorities as necessary to ascertain the effect which completion of the project would have on the fisheries in the Bay of Fundy.

In its conclusion (para.100) "The Board emphasizes that many of the engineering problems involved in the Passamaquoddy Project are unprecedented anywhere in the world and their solution will require a great deal of costly foundation exploration, field surveys and engineering analysis," and the Board points out that "in an undertaking of this magnitude there is no short-cut that will provide dependable data on which to base sound judgment", and that "full assurance in answer to the question of feasibility of an international tidal electric power project at Passamaquoddy Bay can be given only after very careful and detailed investigations have been made."

Conclusions

The International Joint Commission has reviewed the Board's Report, has given consideration to the views expressed by interested parties, and to other matters of record and has reached the following conclusions which the Commission states in answer to the respective questions under References:

1. The review of existing plans for the development of tidal hydro-electric power at Passamaquoddy Bay in Maine and New Brunswick and the evaluation of available information shows that additional information is required to enable a conclusion to be reached as to whether any one of the existing or other plans for the development of tidal power at this location is practicable, and is desirable from the point of view of public convenience and necessity.

The critical feature, in making use of the large quantities of energy in the Tides at Passamaquoddy Bay which is potentially available for conversion into electric energy, lies in the dams and as to whether or not these dams can in fact be built at the particular locations required and at a cost which is economically practicable.

The question of the practicability of the construction of these dams depends principally on the foundation conditions at the respective sites. Adequate information in this connection to permit conclusions to be reached is not at present available.

2. The scope of the investigation envisaged by the Commission's competent engineering Board is necessary to determine whether an international Passamaquoddy tidal electric power project is practicable, and desirable from the point of view of public convenience

and necessity is set forth in the attached report of the Board, to which attention is invited. The cost of the investigation thus envisaged is estimated by the Board at \$3,900,000 (para 99). The Board's estimate of cost of the project investigation contemplated by it is accepted by the Commission as reasonable. The Commission is not unmindful of the possibility that the early stages of the investigation might supply information that would resolve the question of practicability and desirability of the project, in which event the expenditure of funds would be less than \$3,900,000.

3. As regards the third question of the Reference, namely, "to report its recommendations as to the basis on which the costs of the investigation shall be apportioned," the Board has suggested (para.16) "that such costs might be apportioned on the basis of the proportional amount of benefits, equal or otherwise, to each country, as indicated when and if the project were built." The Commission agrees that apportionment of costs of the investigation in proportion to benefits as proposed by the Board is sound in principle.

Signed in the City of Detroit, Michigan, this twentieth day of October, 1950.

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