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DISCHARGE OF WATER IN RIVERS: INTRODUCTION USSR

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METHODS ACCEPTED IN THE USSR FOR THE COMPUTATION OF MAXIMUM DISCHARGE  
OF WATER IN RIVERS: INTRODUCTION

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Given below is a Russian-language summary and table of contents to a 20-page report, title as above, that appeared in a symposium entitled "Collection of Reports Presented by the Committee on the Participation of the USSR in International Power Association," published in 1951 by Gosenergoizdat in Moscow and Leningrad in connection with the Sectional Meeting of the World Power Conference and Fourth International Congress on Large Dams held 10-15 January 1951 at New Delhi, India.7

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The report clarifies the great value of establishment of rational methods of computation of maximum water discharge, particularly in connection with the significant hydrotechnical constructions in <sup>the</sup> USSR. These problems are under consideration by the Academy of Sciences of the USSR and by the academies of the <sup>Union</sup> ~~Union~~ republics, and also by a whole series of research institutes, chairs of higher educational institutions and large-scale planning, and ~~other~~ <sup>various</sup> organizations. Much attention in <sup>the</sup> USSR has <sup>also</sup> been devoted to work on the standardization of ~~investigative~~ <sup>research</sup> methods, equipment for observation, and procedures <sup>for</sup> basic computations.

The methods of computation of maximum discharge are regulated by <sup>State</sup> ~~the~~ <sup>Union</sup> ~~standard~~ (GOST) 2999-58.

In the case where long <sup>term</sup> ~~series of~~ observations, ~~or~~ <sup>or</sup> short <sup>term</sup> ~~series of~~ observations which may be ~~extrapolated~~ <sup>to</sup> long <sup>term</sup> ones, are available, it is recommended that the maximum discharge of water be determined according to safety curves, while the probability of excess of maximum discharge be established in relation to the investment class of the equipment. For the sake of safer computations a "guaranty correction" is introduced which takes into account the variation coefficient, knowledge of reservoir, and the number of years of observation. As the main distribution curve, Pearson's curve is recommended (type III). The ordinates of the safety curve are computed from tables. The magnitude of separate maximum "historical" discharges beyond the observation series is also taken into account. Particular attention is paid to the obligatory analysis of physico-geographic circumstances surrounding the reservoir.

In the case where ~~they~~ <sup>are</sup> unavailable or absent, observations indirect methods are applied. The report discusses the most widely applied methods for indirectly computing the maximum spring floods and rain discharges.

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The report <sup>briefly</sup> outlines ~~the~~ the principles of the so-called genetic methods, <sup>being</sup> ~~the~~ development <sup>of</sup> ~~of~~ ~~is~~ ~~procured~~ by the Academy of Sciences of the USSR and by other research institutions in the USSR; these methods are based on a detailed consideration of all fundamental factors ~~in~~ <sup>the</sup> ~~the~~ flow, and on the establishment of scientifically sound rules and interpretations.

The end of the report contains basic conclusions, which emphasize the importance of the development of genetic methods. <sup>the</sup> ~~the~~ necessity of <sup>human</sup> ~~of~~ human influence on nature is stressed in connection with the realization of the scientific principles for the construction of field-protecting forest belts, the introduction of <sup>high-</sup> ~~of~~ ~~crop~~ ~~rotation~~, the construction of <sup>hydroelectric</sup> ~~of~~ ~~on~~ the Volga, Dnieper and in Middle Asia, and the irrigation of wide areas.

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