

**INTERNATIONAL COMMISSION ON LARGE DAMS  
SPANISH NATIONAL COMMITTEE**

**INTERNATIONAL SYMPOSIUM ON  
DAMS AND EXTREME FLOODS**

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SPAIN**

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**Tomo I**  
*TOPIC A) DESIGN*

## PRESENTATION

This publication includes all of the communications to be presented at the symposium "DAMS AND EXTREME FLOODS" in Granada.

The undoubtable interest which this topic has generated is reflected in the large number of communications received. This has led to the decision to divide the presentation into two separate volumes, dedicated to themes A and B respectively. There will be a third volume which will include the general reports, interventions by the experts and decisions taken during the symposium.

We are especially grateful for the contributions made by the Chairmen, General Reporters, Experts and authors of communications, in order that this symposium be useful to the professionals who are faced with important decisions on the design and efficient operation of dams in situations of extreme flooding.

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## A-1 INFLOW DESIGN FLOODS FOR DAMS IN JAPAN

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### **Abstract**

This paper will introduce the design concept used in Japan for determining dam flood inflows, which is composed of three different approaches and will describe discussions made on the inflow design floods to be applied for dams in small drainage areas (less than 20 km<sup>2</sup> in discharge area). As a result, it has been verified that consistent methods of calculation can also be applied to such small drainage areas.

### **1. Introduction**

Determination of a realistic inflow design flood is considered to be one of the most critical elements in assuring the design of safe dams, and is used for determining the structural section of dams and the discharge capacity of spillways. This paper will introduce the design concept used in Japan for determining dam flood inflows and will describe discussions made on the inflow design floods to be applied for dams in small drainage areas.

### **2. Inflow Design Floods for Dams**

The "Inflow Design Floods for Dams" is defined in the Structural Standards for River Protective Facilities (cabinet order) based on River Law. According to the standards, when dams are constructed or reconstructed, the inflow design flood for concrete dams must be selected from the most stringent requirements of the following three criterion: (1) maximum flood discharge to be expected once in 200 years at dam sites, (2) maximum experienced flood discharge, and (3) maximum flood discharge that can be expected at dam sites based on the maximum experienced