

STUDY OF CAVITATION INDEX ON OGEE SPILLWAY

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Abstract

Considerable development has taken place in the construction of multipurpose water resource projects during last decades. These hydraulic structures are affected by releasing water from the dam for various purposes. The purpose of this study is to avoid cavitation. It is proposed to study aeration of spillway for energy dissipation and for prevention of negative pressure. The method used will consist of simulating model of spillway along with an approach channel based on Froude's model law. The energy dissipation will be studied. Further holes will be made on the surface of spillway in such way that the water from nappe will not enter the holes. These holes will be connected with pipe, which will be connected to two vertical open shafts on either side of spillway. This will prevent negative pressure because as soon as negative pressure builds up, air from atmosphere will rush to the down side of nappe [1] [2]. Comparison of this method along with artificial ventilation and without artificial ventilation shall be made and a feasible solution for reducing cavitation substantially through various measures will be suggested. A research program was conducted in the fluid mechanics of BVCOE Laboratory. Brief definition of cavitation and different cavitation index compared with dimensionless variables using dimensional analysis method. The 2D model details, calibration and properties of this apparatus are showed and dealt in this work [3].

Keywords : Cavitation, Ogee spillway, Hydraulics, Energy Dissipation