

THE HYDRAULIC STUDY AND DESIGN OF DIFFERENT TYPE OF SPILLWAY

Prepared by: Ooi Ean Shean

ABSTRACT

The spillway is among the most important structure of a dam project. It provides the project with the ability to release excess or flood water from the crest to the downstream to avoid overtopping of the dam. The spillway should design to accommodate the probable maximum flood in the dam. The scope of my project is to design and investigate the advantage and disadvantage of different types of spillway. Each spillway has their own hydraulic theory and limitation. So, hydraulic design of different types of spillway such as ogee spillway, shaft spillway, chute spillway, siphon spillway and steeped spillways are studied to evaluate the performance of each type of spillway in the existing dams. In the practice, the spillway can be considered with respect to cost, topographic conditions, dam height, foundation geology and hydrology. From the result it can be observed that every spillway has their limitation like the ogee spillway can resist large discharge but the velocity of flow is high and will scour the base and become plunge pool. Compare to the ogee spillway the stepped spillway has minor the kinetic energy but the design head is limited ($<3\text{m}$) and cause more longer crest length needed. So, the in conclusion of this design project will enable student to assess their understanding of the method of analysis and theory.