عنوان مقاله:

Numerical Modelling of Flow in Morning Glory Spillways Using FLOW-3D

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خلاصه مقاله:

Suspended load amount with flow is one of the factors which are disregarded in designing morning glory spillways. It is due to the fact that physical modeling of sediment load with flood flow is very difficult and costly. Suspended sediments load with flow can change the density of passing water, leading to changing most of assumptions existing in spillways design. With its unique potential to model dense flows and flows contain suspended loads, numerical model of FLOW-3D can provide valuable information in this regard. In the present study, flow was calibrated and validated using FLOW-3D through physical model. Then, by adding suspended load to flow, the values of discharge passing through the morning glory spillway were determined. In this regard, applying suspended load (3000, 6000, 9000, and 12000 ppm), flow discharge values were investigated for various heads over the spillway. The research findings revealed that increasing suspended flow load leads to decreasing values of flow passing through the morning glory spillways; such that, deceased values strongly depend on suspended load.

کلمات کلیدی:

Suspended Load; Flow Discharge; Morning Glory; Numerical Modeling; FLOW-3D