

عنوان مقاله:

A study on seepage data utilized in the safety assessment of Haditha Dam : A simulation by SEEP/W model

محل انتشار:

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خلاصه مقاله:

Background : Special attention should be given to the seepage in dams since it may cause failure. Seepage is not considered in the total risk factor calculated using the International Commission of Large Dams (ICOLD), the United States Bureau Reclamation (USBR) while the description of the dam seepage condition is given a weightage in the Brazilian method. Methods: Haditha Dam, Iraq, was constructed on varying degrees of limestone beds of the Euphrates and Ana formations. Therefore, seepage from the dam should be continuously monitored and accurately measured. In the present study, a methodology was proposed to overcome the problem of inconsistent seepage data. The inconsistent seepage rates can be replaced by the predicted seepage rates obtained from SEEP/W model. Results: The predicted seepage rates for different water levels in the reservoir of Haditha Dam were found in association ( $R^2 = 0.96$ ). In addition, the value of mean absolute error (MAE) for the model accuracy was found to be  $0.006$ . According to the Brazilian index, the weightage for the seepage condition of Haditha dam was in the second category and equal to 3. Conclusion: For Haditha Dam, the seepage data cannot be used in the dam risk assessment since it was inconsistent with gaps, and it can be replaced by the consistent predicted seepage rates predicted by SEEP/W model. Generally, the aging and other dam problems result in increasing seepage rate. This highlights the importance of efficient management that follows resilient monitoring and surveillance programs that ensure dam safety

کلمات کلیدی:

Inconsistency, Seepage, Haditha dam, SEEP/W, Safety

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