عنوان مقاله:
Earthquake Analysis of Concrete Gravity Dams Including Dam- Reservoir- Foundation Interaction

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خلاصه مقاله:
Because of the reservoir effect, dynamic analysis of concrete dams is more involved than other common structures. This problem is mostly sourced by the differences between reservoir water, dam body and foundation material behaviors. To account for the reservoir effect in dynamic analysis of concrete gravity dams, two methods are generally employed. Eulerian method in reservoir modeling gives rise to a set of coupled equations, whereas in Lagrangian method, the same equations for dam and foundation structure are used. In this paper, a general procedure for analysis of the response of concrete gravity dams, including the dynamic effects of reservoir with Lagrangian modeling and flexible foundation, to the horizontal and vertical components of different earthquake loads is presented. Analysis of dam-foundation reservoir system performed to calculate reservoir hydrodynamic pressure on dam face and dam displacement under earthquake, for dam-foundation-reservoir systems with various dimensions, characteristics and earthquake. Then results of dam-foundation-reservoir system analysis is evaluated in different conditions such as rigid foundation and flexible foundation and in different cases such as loading frequency, boundary condition and foundation elasticity modulus effects

کلمات کلیدی:
Lagrangian method, Earthquake, Concrete gravity dam

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