

عنوان مقاله:

An Innovative Design Philosophy Simplifying Design of Massive Concrete Structures using Finite Element Based Software

محل انتشار:

اولین کنفرانس بین المللی و سومین کنفرانس ملی سد و نیروگاههای برق آبی (سال: 1390)

تعداد صفحات اصل مقاله: 10

نویسندگان:

s Cheshmehkani - Mahab Ghodss Consulting Engineers

m Cheshmehkani
as Noorzad
h Hasani

خلاصه مقاله:

Hydro Power Plants mainly consist of large volume of mass concrete to support the heavy electro-mechanical equipments with dynamic excitation, and also to provide enough weight to meet the stability requirements as well as to provide enough space for drainage system and to access to different parts of HPP. Usually in massive concrete structures like dams, no reinforcement is used and stability of the structure is preserved using other mechanical mechanism such as increasing the compression force via arch shapes or weight. In other cases, reinforcement in the mass concrete are determined using simplified assumptions mainly considering the provisions to prevent cracking during the temperature rise in cement hydration and also cracking resulted from reinforcement bar forces. In this paper an innovative design philosophy is presented which allows exact modeling of the structure using Finite Element and then designing the reinforcement in mass concrete based on the internal forces in the structure. In this design philosophy, principal stresses and directions will be determined in concrete elements and then the required reinforcement will be specified wherever concrete is in tension.

کلمات کلیدی:

Hydro Power Plant, Mass Concrete, Design Philosophy, Finite Element, ANSYS, Gotvand

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/138407>

