**سیویلیکا - ناشر تخصصی مقالات کنفرانس ها و ژورنال ها** گواهی ثبت مقاله در سیویلیکا CIVILICA.com

## عنوان مقاله:

SEISMIC ANALYSIS OF GRAVITY DAMS IN NARROW VALLEYS: RUDBAR-LORESTAN RCC DAM

محل انتشار:

پنجمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1386)

تعداد صفحات اصل مقاله: 9

**نویسندگان:** Manafpour - Senior Engineer, Special Structures, Halcrow Group Limited, Glasgow, UK

Morison - Project Manager, Dam and Hydropower Dept., Halcrow Group Limited, Swindon, UK

Chen - Senior Analyst, Special Structures, Halcrow Group Ltd, Glasgow, UK

Gallocher - Chief Engineer, Special Structures, Halcrow Group Ltd, Glasgow, UK

## خلاصه مقاله:

In this paper the seismic design issues for gravity dams in narrow valleys are reviewed with reference to those considered in 158m high Rudbar-Lorestan RCC dam in Iran. The dam has a length to height ratio of between 0.5 and 1 at the base and crest level respectively. It is located in a highly seismic site with a potentially active fault close to the left abutment. The abutments at either side of the valley have steep slopes of about 1:5. In addition to conventional two-dimensional analyses, three-dimensional nonlinear dynamic analyses have also been carried out to provide an understanding of structural behaviour of the dam-water-foundation system under static as well as extreme seismic loads. Both Design Basis and Maximum Design earthquakes are considered. To allow for proper propagation of seismic waves within the foundation the soil-structure interaction is solved by formulating the dynamic equation of motion in terms of relative displacement to free-field response. In addition, transmitting boundaries are used to simulate the infinite boundaries of the foundation. Three-dimensional analyses account for nonlinear behaviour of contraction joints and staged construction of the dam. This allows for appropriate stress built up within the dam body during the construction and reasonable modelling of actual 3D behaviour. Comparative results for 2D and 3D analyses are reported. It is shown that considering 3D effects will generally reduce peak tensile stresses from those seen in 2D models, however the blocks on steep slopes of the valley are more susceptible to cracking under seismic .loads

## کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:



https://civilica.com/doc/16214