Effective of the energy damping amount in seismic behavior of water tanks

H Vosoughifar - Assistant Professor of Civil Engineering Department of Islamic Azad University, Tehran South Branch, Tehran, Iran,

m Moradi - Master Science Student of Hydraulic Civil Engineering Department of Islamic Azad University, Maragheh Branch, Maragh, Iran,

p Farshadmanesh - Graduated of Master Science, Civil Engineering Department of Islamic Azad University, Tehran South Branch, Tehran, Iran,

With respect to being vulnerable reservoir tanks in earthquakes and seismic waves generated at the surface, especially in the high range, the solution is to reduce this phenomenon was evaluated in this paper. Sloshing is a well-known phenomenon in liquid storage tanks subjected to base or body motion. Up to the use of multiple vertical baffles for reducing the sloshing effects in tanks subjected to seismic loads has not been taken into consideration so much. On the other hand, although some of the existing computer program is able to model sloshing phenomenon with acceptable accuracy, the full dynamic analysis subjected to random excitations, such as seismic waves, is very time consuming. In this paper, a numerical method based on VOF two-phase fluid theory was used that it does not influence the volume of each phase is a variable. Installing the mentioned dampers with respect to the seismic zone and the use of local storage can be done without any limitations. The proper location of baffle should install near to place the bulk of the mass and mass storm in decrease turbulence phenomenon. The vertical baffle can reduce the wave height and the percentage of the energy dissipation

Earthquake, sloshing, reservoir tank, baffle

https://www.civilica.com/Paper-ICCAU01-ICCAU01_3046.html