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Innovation in turbo generator frame foundation, an experimental and analytical study

Atul K Desai and Sungyani Tripathy

Sardar Vallabhbhai National Institute of Technology, India

Turbo generator frame foundation is very important for all types of power plants viz., gas, steam, hydro, geothermal and nuclear power plants. The turbo generator is the main part of a power plant. Turbo generator is generally mounted on the top deck of the foundation. In this work, structure interaction (SBSI) has been studied by conducting experiments and numerical analysis in SAP; 2000 software. A barrette is a cast in place reinforced concrete column. The role of the Soil Barrette Structure Interaction (SBSI) is advantageous to the turbo generator foundation system under seismic loading because it transfers seismic loading through columns to barrettes. Experimental tests have been conducted for three different cases, namely: Turbo generator foundation supported by Raft on medium dense sand, turbo generator foundation supported by pile in medium dense sand and turbo generator foundation supported by barrettes in medium dense sand. In addition to the experiments, SAP; 2000 has been used for comparison of results of above three cases. Results are plotted in terms of the structural response parameters such as displacement in top deck at seismic loading places, comparison of frequency and acceleration. Comparison of the numerical results and the experimental data shows a good agreement confirming the reliability of the numerical model. Both experimental and numerical results reveals that soil barrette structure interaction decreases displacement of top deck at lateral direction and frequency comparison to raft and pile structures.

Biography

Atul K Desai has completed his PhD at SVNIT. He is the Professor of Applied Mechanics Department since 33 years. He has published more than 100 papers in international journals and more than 50 papers in international conferences.

atuldesai61@gmail.com

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