

Departmental Seminar

Seminar Title : Conference Return Seminar : Feasibility Study of Static Liquefaction Susceptibility of Pond Ash Treated with Bentonite
Speaker : Prof. Rabi Narayan Behera
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Venue : CE Seminar Hall
Date and Time : 24 Dec 2024 (0330 pm)
Abstract : Static liquefaction is often considered as the most catastrophic mechanism due to the fact that static liquefaction failures occur without warning. Pond ash, a by-product from coal fired power plants is dumped into ash ponds, which possess a risk of liquefaction due to cyclic or static loading. In this present study, the effects of confining pressure and bentonite content on the static liquefaction of pond ash have been explored. The materials were tested at their compacted maximum dry densities and optimum moisture contents. Strain controlled static consolidated undrained triaxial tests have been carried out on pond ash-bentonite samples (0-15% @5% increment of bentonite) at varying confining pressures (50, 100 and 150 kPa), at 0.8 mm/min rate of loading. Firstly, the pond ash sample mixed with bentonite showed a better friction angle and high cohesion. Secondly, heavy compacted pond ash samples are less susceptible to static liquefaction. Thirdly, the excess pore water builds up at a faster rate for the pond ash sample as compared to the pond ash bentonite mixture. Finally, it may be concluded that bentonite content increases the static liquefaction resistance of