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THURSDAY, 17 JUNE 2021

"SOIL LIQUEFACTION RISK IN OFFSHORE WIND DEVELOPMENT"

by

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REGISTER: https://us02web.zoom.us/meeting/register/tZEld-yprD0pGdccT-ehNWZj6U9mOS0WCKj9

At 17:55 for 18:00 hours (duration approximately 1 hour) UK TIME

One of the most impactful causes of damage to offshore structures during earthquakes is the occurrence of liquefaction in saturated sand deposits. Loose sand tends to contract under the cyclic loading imposed by earthquake shaking, which can transfer normal stress from the sand matrix onto the pore water if the soil is saturated and largely unable to drain during shaking. The result is a reduction in the effective confining stress within the soil and an associated loss of strength and stiffness that contributes to deformations of the soil deposits.

The evaluation of liquefaction potential hinges in the comparison of the seismic demands imposed on the soil, expressed in terms of cyclic stress ratio (CSR), and the capacity of the soil to resist liquefaction, expressed in terms of cyclic resistance ratio (CRR). This presentation wants to provide an overview of the soil liquefaction phenomenon, associated risks for offshore structures (such as Jack up vessels and cables), and analyses to determine the safety factors against liquefaction, liquefaction potential index as well as estimated vertical and horizontal displacements.