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WEBINAR TALK ON

Soil Ageing Effect and Its Application for Offshore Foundation Integrity Assessment

Organised by:
Oil, Gas and Mining Technical Division, IEM

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9.00AM - 11.00AM

SPEAKER:
EN MUHAMMAD JOEHAN BIN ROHANI

SYNOPSIS

The expected increase in bearing capacity of piles with time can be accounted for in offshore foundation design. This phenomenon provides possibilities for reassessment of piled offshore structures which otherwise may warrant foundation system modifications and strengthening in their lifetime due to increase in the loads to the structure.

Studies have indicated that in clay soils axial pile capacities increase may be of the order 10 to 40 % within a period of only 1 year after the ordinary primary re-consolidation phase is over and 20 to 100 % after 10 years. Even for sands significant increases have been observed.

Accounting for the expected increase in pile capacity with time can also have a positive impact on the “first time” design of pile foundations. This presentation shall present the concepts with respect to the usage of time effect on pile capacity; highlight the importance and benefit of pile ageing from the perspective of management of existing offshore structures and to share some experience with regards to structural and foundation integrity assessment.

PETRONAS involvement in a JIP “Verification of Pile Ageing Effect via Pile Testing” makes it amongst the first oil and gas operators to benefits from soil ageing effects. This presentation will share case studies and discuss the benefits derived out of utilizing soil ageing effects on foundation integrity assessments.

SPEAKER’S PROFILE

Encik Muhammad Joehan Rohani obtained his Bachelor of Engineering in Civil Engineering from Queensland University of Technology, Australia in 1996 and Master of Science from University of Warwick, UK in 2006. He has over 25 years of experience in fields of Geotechnical and Structural Engineering. Specialising in offshore geotechnical engineering, he has also been involved in various research projects in the area of effect of shallow gas on soils, pile ageing effects, remoulded soil properties, lateral soils stiffness, predictive analytics, use of machine learning and remote sensing methods for geohazard assessment. Joehan has publised in more than 25 international and local conferences and holds IP on use of machine learning for geohazard assessment. He is a working member in the ISO Marine Soil Investigation, API-ISO WG10-Foundations and Standard Malaysia-Offshore Structures Technical Committee.

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