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海洋地質調查技術
Technique of Offshore Geological Investigation

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摘要

進行海洋地質調查時，基於現場工作安全、品質、時程與經濟之考量，依調查位置水深條件、調查深度與地質條件之不同，採用之調查方法、載台與機具設備亦不同。在鑽探的部份，於水深較淺之海域，採用油壓固定式平台作為工作載台，並以油壓式鑽機來進行鑽探取樣，在施工程、取樣方法以及使用之鑽機設備，與陸上鑽探較為相似；於水深較深之海域，則須以探勘船作為工作載台，並以船載式鑽機進行鑽探取樣。

在圓錐貫入試驗(CPT)的部份，當需要之貫入深度較淺且調查點位較多時，採用沉底式 CPT 進行調查；當貫入深度較深時，於水深較淺處，建議採用平台式 CPT 進行調查，而在水深較深處，則須採用探勘船載式鑽機配合下孔式 CPT 進行調查。

本文之目的，旨在介紹海事工程進行地質調查時，所採用之調查方法與機具設備，以提供海事工程之從業人員，對於海洋地質調查方法以及機具選用上，有初步之概念，並可作為海事工程工址調查工作規劃之參考。

關鍵詞：海上鑽探、油壓固定式平台、探勘船、鑽機。

Abstract

Based on the safety, quality, schedule and economic consideration, different types of method, platform and equipment will be used depending on water depth, investigate depth and geological conditions of investigation location for offshore geological investigation.

For drilling investigation, Jack-up Platform will be used for shallow water sites, execute drilling and sampling work through hydraulic drilling rig, which is similar to the process, sampling method and drilling equipment of onshore project. Exploration vessel will be used in deep water sites, using marine drill rig to execute drilling and sampling work.

For Cone Penetration Test, Seabed CPT equipment will be used for shallow penetration depth sites. For deep penetration depth sites, Offshore CPT equipment with Jack-up Platform will be used in shallow water sites, and downhole CPT equipment with exploration vessel will be used in deep water sites.

The purpose of this paper is to introduce the geotechnical investigation equipments of offshore engineering project. Provide a preliminary concept for practitioners to select the investigation method and equipments, and as a reference of project planning for offshore geological investigation.

Keywords: offshore drilling , jack-up platform , exploration vessel , drilling rig.