Safety of DP Operations on Mobile Offshore Drilling Units on the Norwegian Continental Shelf

Barriers to Prevent Loss of Position

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Abstract

Barrier methodology is applied to safety modeling of DP operations on mobile offshore drilling units (MODUs). Based on the DP incident experiences on MODUs on the NCS, a critical scenario, i.e. a DP control system initiated drive-off due to erroneous position data from DGPS systems, is selected for modeling and analysis. In this paper ten barrier elements are identified in order to prevent this loss of position scenario from initiation. Deficiencies on these barrier elements are revealed based on the operational experiences on the NCS. Measures to strengthen these barrier elements are recommended. These findings and the methodology are believed to be of generic and practical values for loss of position preventions on offshore DP drilling units worldwide.

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