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Structural Analysis and Detail Design of APV Module Structure Using Topology Optimization Design

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Abstract : In the study, structure for one of offshore drilling system APV(Air Pressure Vessle) modules was designed by using topology optimum design and performed structural safety evaluation according to DNV rules. 3D model created base on design area and non-design area separated by using topology optimization for the environmental loads. This model separated 17 types for wind loads and dynamic loads and performed structural analysis evaluation for each model. As a result, the maximum stress occurred 181.25MPa.

Keywords: APV, topology optimum design, DNV, structural analysis, stress

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