Analisis perancangan semi-submersible platform pada aktivitas lepas pantai di wilayah perairan laut dalam Arafuru = Analysis of semi submersible platform design for offshore activity in Arafuru deepwater area

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Abstrak

Meningkatnya kebutuhan konsumsi minyak dan gas membuat Indonesia ketergantungan akan transaksi impor minyak mentah terhadap Negara lain. Hal tersebut disebabkan oleh menurunnya tingkat produksi minyak mentah dalam negeri, sehingga kebutuhan bahan bakar minyak tidak dapat terpenuhi meskipun beberapa wilayah di Indonesia memiliki potensi tersebut. Terdapat beberapa wilayah yang berpotensi memiliki sumber cadangan minyak mentah, dimana salah satunya berada di wilayah perairan Laut Arafuru. Namun, ketersediaan alat yang sesuai, menjadi salah satu masalah yang perlu ditangani. Semi-submersible Oil Rig Platform, merupakan jenis platform yang sesuai. Peneliti melakukan perancangan desain dan menyesuaikan dengan lingkungan Laut Arafuru yang berpotensi memiliki 24.36 MMSTB cadangan minyak mentah. Peneliti juga melakukan analisis Loads and Responses, analisis Response Amplitude Operator (RAO) serta melakukan analisis pemilihan Mooring Lines. Sehingga kapabilitas Semi-submersible Platform sesuai dengan lingkungan Laut Arafuru dan kebutuhan minyak mentah Indonesia dapat terpenuhi tanpa harus melakukan transaksi impor ke negara lain.

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The increasingly of oil and gas consumption, make Indonesia dependence to crude oil import transaction with another country. That is caused by decreasingly crude oil production which is the impact of this goes to necessity of oil and gas consumption that can't to be fulfilled. Although, some of territory of Indonesia have a potential of it. There are some territories which are potentially have crude oil resources. And, Arafuru Ocean area is one of them. But, readiness of appropriate tools, is the one of problem that have to be fixed. Semi-submersible Oil Rig Platform is the one of appropriate Platform. So, the researcher make a preliminary design of platform by adjusting the platform that suits with the environmental of Arafuru Ocean which is potentially have 24.36 MMSTB of crude oil. Researcher also analyze the Loads and Responses the Response Amplitude Operator (RAO) and analyzing Mooring Lines Type that have to be choose. With the result of that, the capability of Semi-submersible Platform will suit with the environmental of Arafuru Ocean and the necessity of crude oil will be fulfill without doing import transaction with another country.