Studi perencanaan pemeriksaan bawah air struktur anjungan lepas pantai berdasarkan risiko = Study of underwater inspection program based on risk for offshore platform structure

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Abstrak

[ABSTRAK
Pemeriksaan struktur anjungan lepas pantai berdasarkan risiko didasarkan dari data operasi dan lingkungan untuk menentukan tingkat peluang kegagalan dan konsekuensi kegagalan sehingga dapat ditentukan tingkat risiko dari masing-masing anjungan lepas pantai. Tingkat risiko dari anjungan lepas pantai menentukan jadwal, metode dan lingkup dari pemeriksaan bawah air suatu anjungan lepas pantai. Hasil penelitian dari total 65 anjungan lepas pantai yang dilakukan studi, terdapat diantaranya memiliki tingkat risiko tinggi sebanyak 19 anjungan lepas pantai, dan sisanya 46 anjungan lepas pantai memiliki tingkat risiko sedang. Banyaknya jumlah anjungan yang memiliki tingkat risiko sedang hingga tinggi tersebut dipengaruhi dominan oleh kondisi desain. Penerapan pemeriksaan bawah air berdasarkan risiko juga memberi manfaat penghematan biaya sebesar 67,5 % dibanding pemeriksaan bawah air berdasarkan jangka waktu.
ABSTRACT
Risk based inspection determined from risk level of offshore platform, risk level developed from probability of failure and consequences of failure. Operational and environmental database from platform are need to identified probability of failure and consequences of failure. Inspection interval, inspection method and scope of inspection for offshore platform underwater inspection are defined from risk level. The risk evaluation of the 65 platforms showed that 19 platforms were in high risk and 46 platforms were in medium risk. Platform baseline (design condition) is the major contribution for high and medium risk of the platform. The cost evaluation of the underwater inspection program based on risk compare to underwater inspection program based time interval showed the cost saving into 67,5%.;Risk based inspection determined from risk level of offshore platform, risk level developed from probability of failure and consequences of failure. Operational and environmental database from platform are need to identified probability of failure and consequences of failure. Inspection interval, inspection method and scope of inspection for offshore platform underwater inspection are defined from risk level. The risk evaluation of the 65 platforms showed that 19 platforms were in high risk and 46 platforms were in medium risk. Platform baseline (design condition) is the major contribution for high and medium risk of the platform. The cost evaluation of the underwater inspection program based on risk compare to underwater inspection program based time interval showed the cost saving into 67,5%.;Risk based inspection determined from risk level of offshore platform, risk level developed from probability of failure and consequences of failure. Operational and environmental database from platform are need to identified probability of failure and consequences of

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