ABSTRACT

STUDY OF TRADING TANKER SELECTION FOR FSO CONVERSION AT JAVA SEA

Name: Wahyu Ade Saputra
NRP: 4112 203 902
Department: Marine Production and Materials Technology
Supervisor: Ir. Wasis Dwi Aryawan, M.Sc., Ph.D.

Global oil & gas industries have shown rapidly advancement along with market demand. Many area in Indonesia have been explored, for example in Java Sea. Exploration activities have been supported by many technology and infrastructure, one of them is Floating Storage and Offloading (FSO). Nowadays more FSO built by conversion process. This is because FSO from tanker conversion can made faster and cheaper than new built. But FSO conversion has fatigue life less than new built. There are three component must be considered in conversion process. The first is study about Indonesian water that consist of environmental condition and owner requirement. Fatigue life value greatly influenced by environment load, which the significant wave height must be considered. The significant wave height at Java Sea is around 4.6 metres, Madura Strait 6.2 metres, Bali 3.4 metres, and Kepulauan Seribu around 3 metres. The second component is study about trading tanker condition that will be converted for FSO, commonly called Condition Assessment Program (CAP). And the last component is about conversion process that discuss steps of conversion based on code and class rules that used. From all of study, we get the result that trading tanker CAP 3 is the best option for conversion of FSO that have 10 years operation life with price US$ 30,946,089.46 for Madura Strait, US$ 25,232,649.69 for Java Sea, US$ 23,969,566.55 for Kepulauan Seribu, and US$ 23,969,566.55 for Bali Sea.

Keywords: cost, construction, conversion, exploration, environment, fatigue life, Floating Storage and Offloading (FSO), new built, trading tanker.