ON-BOTTOM STABILITY ANALYSIS OF SUBMARINE PIPELINE
WITH DNV RP F109 METHOD: PIPELINE INSTALLATION PROJECT
CASE STUDY FROM PLATFORM EZA TO PLATFORM URA
ALONG 7.7706 KM IN JAVA SEA

Name: Rahmat Riski
Reg: 4306 100 007
Department: Teknik Kelautan FTK-ITS
Supervisors: Ir. Murdjito, M.Sc. Eng
Prof. Ir. Soegiono

ABSTRACT
In Submarine pipeline design process, important problem to consider is stability when the pipeline on seabed during operation. DNV (Det Norske Veritas) has revised DNV RP E305 standard code On-Bottom Stability Design Of Submarine Pipeline 1988 with DNV RP F109 standard code On-Bottom Stability Design Of Submarine Pipeline 2007. Revision it is reduction of loading on the pipeline due to interaction between pipe with soil on a pipeline system. Hydrodynamic forces can reduced because seabed permeability existence and pipe penetration to the seabed. Case study took in this final project is pipeline installation project from platform EZA to platform URA along 7.706 km in Java Sea, it has calculated stability with DNV RP E305 by F.C. Sianturi (2008). Caused additional reduction factor of hydrodynamic forces on DNV RP F109 code, encouraged to do stability recalculate, so it can be seen how pipeline stability effect, hydrodynamic forces and concrete coating requirement. Further can be done comparison on-bottom pipeline stability calculation result between DNV RP E305 and DNV RP F109. Furthermore, force on the pipeline will experience a reduction along with increase buried depth or pipe penetration to the seabed. Then will be done modelling with FLOW 3D software for obtain pressure contour on submarine pipeline.

Keywords: DNV RP F109, On-Bottom Stability, Submarine pipeline Reduction, Concrete Coating