TECHNICAL ANALYSIS OF CRANE REPLACEMENT AND ITS FOUNDATION ON SEASAFE SUPPORTER SHIP (61m WORK MAINTENANCE VESSEL)

Name : Bagoes Roediyanto Poetra  
NRP : 4208 100 520  
Department : Marine Engineering  
Supervisors : Irfan Syarief Arief ST, MT  
Ir. Surjo Widodo Adji, M.Sc

Abstract

Work maintenance vessel is one of offshore support vessel who works as offshore activity supplier and also doing the maintenance or repairing the offshore structure. These ships depend on the lifting capacity (crane) their own, with the big capacity more works can be done. Big crane capacity need strong construction intentionally on crane pedestal to accommodate force caused by crane loading.

In this case, observation point on crane pedestal in “SEASAFE SUPPORTER” ship. To analyze the foundation structure strength we use Finite Element method where the structures are dividing into small piece with finite element number along with the boundary condition on the structural material which used. With the maximum loading simulation on crane ascertainable that the maximum stress on construction is 214.002 MPa located in pedestal top edge. This value is under the allowable stress comply with material yield strength (235 MPa) and 85% safety factor.

Keywords: Work Maintenance vessel, crane, crane pedestal, construction, Finite Element, stress, yield strength.