

SECTOR:
ENERGY

OFFERINGS:
ENGINEERING SERVICES

TECHNOLOGY:
FEM

STRUCTURAL ANALYSIS OF RETRACTABLE PLATFORM

Our customer is involved in design and erections of marine structures and equipments. Structural failure was occurring on a retractable platform which was erected on a ship. Our client wished to revisit their design before modification of the structure by doing a thorough FEA simulation. The customer was interested in finding the failure regions and solutions to avoid these failures.

Zeus Numerix performed structural analysis of the retractable platform for different configurations of the platform; in its extracted position or retracted position. The wheel that assists for the movement of the platform on the girder was also checked for structural integrity. Simulations were done to find the Von-Mises stress and deformation in the structure. High stress region on the structure were marked for potential failure of the structure. An analysis based design approach was followed to find the solution for reducing high stress and thus avoiding future failures.

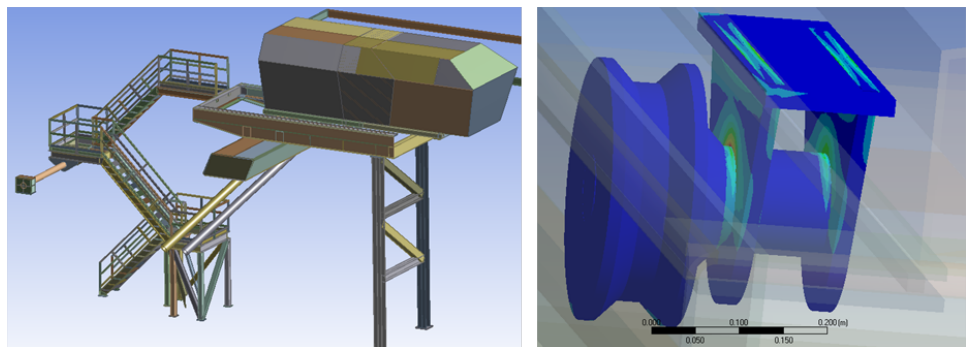


Figure: (a) Retractable platform on ship (b) Stresses on wheel and girder

Customer was provided with deflection plots for the structure and the Von-Mises stress distribution. Failure zones were marked. Appropriate strengthening of structures was suggested to avoid the failure of the structure and maintain its structural integrity. During the period, Zeus Numerix team worked as an extended off-shore center dedicated to the customer offering substantial time and cost benefits.