Technical and Economic Analysis for Conversion of Steam Boiler to Thermal Oil Boiler As an HFO Heating on MV Amazon

Name : Hendra Saputra
NRP : 4207 100 004
Department : Marine Engineering
Advisor : 1. Ir. Indrajaya Gerianto. M.Sc
          2. Ir. Hari Prastowo.M.Sc

Abstract
MV. Amazon is a container ship owned by PT.SPILL (Indonesia) equipped with a heating system to heat the HFO bunker, settling HFO, HFO tanks daily and so by using the steam boiler. In this final duty conducted the technical and economical analysis of the initial design of the steam boiler using a thermal oil boiler replaced. Technical analysis is performed to determine how the thermal oil boiler heating system suitable for application at the MV. Amazon and economic calculation is performed to determine the costs involved in replacement steam boiler heating system into a thermal oil boiler system which includes the investment cost, installation cost, the cost of working fluid and fuel costs. From the results of design calculations of thermal oil boiler heating system MV. Amazon acquired capacity of 581 kW boilers, fluid heaters using LF Calflo production of Petro Canada. Thermal oil boiler system using ciculating of 21.66 m³/hr pump and supply pump at 2 m³/hr. From the results obtained that the economic calculation of investment costs and the cost of the working fluid steam boiler is more economical than the thermal oil boiler, while the cost of fuel thermal oil boiler is more economical than the steam boiler.

Key Word: Steam boiler, thermal oil boiler, HFO, MV.Amazon