

ABSTRACT

Dwi Maryuana Restu, 2018, NIT: 50134964.T, “*Water Quality Analysis for Steam Boiler Operation at MV. NYK Vega*”, Program Diploma IV, Technical, Merchant Marine Polytechnic of Semarang, Supervising I: Abdi Seno, M.Si, M.Mar.E and Supervising II: Andy Wahyu Hermanto, S.T, M.T.

The steam boiler is a closed tube that can produce steam at a pressure greater than one atmosphere, by heating the water within the boiler. The availability of hot steam is essential for the smooth operation of machinery in need, for example for F.O fuel heater, freshwater heater, and others. Water used in the process of steam formation is very influential on the condition of the boiler. A decrease in water quality can affect the operation of the boiler, so water quality should always be maintained.

Research method that writer use in preparation of this thesis is descriptive qualitatif research method. In this case the writer use the SWOT method as a data analysis technique to analyze what factors cause the decrease of boiler water quality and what efforts are done to overcome these factors by identifying strengths, weaknesses, opportunities, and threats from the environment systematically to formulate the strategy to be taken.

Based on the result of the research that has been done by the writer, it can be concluded that water boiler degradation is caused by two factors, 1) distillate water not yet widely available in ship caused by leakage of evaporator pipe on FWG and mechanical seal damage at distillation pump. 2) Freshwater conditions from land are not suitable for boiler water. To overcome these factors can be done by checking to determine which pipe is leaking, patching the leaking pipes using copper plugs, opening and closing the inlet valve and water outlet of the evaporator heater slowly to avoid thermal shock which can cause pipeline leakage, mechanical replacement seal on the distillation pump, and testing of boiler water on board, addition of chemical dosing and water boiler blowdown.

Keywords: boiler, water quality, SWOT.