ABSTRACT

Danny Arif Setiawan, 2017, NIT: 49124654.T, "*Optimizing maintenance of main engine fresh water cooling at MV. DK 01 with hazop method*", thesis Engineering Studies Program, Program Diploma IV, Semarang Merchant Marine Polytechnic, Supervisor I: F. Pambudi Widiatmaka, St, Mt Supervisor II: Capt. Samsul Huda, MM, M.Mar.

In the maritime world today, the competition in the use of sea freight transport services is very tight so that the shipping company is prioritizing the cruise was good and satisfying. Efforts to do that is by maintaining the security, accuracy and savings in shipping. In general, the ships are now using diesel engines, both for main propulsion or as auxiliary engines, due to the highly efficient diesel engine. To meet the needs of the shipping fleet, the vessel must be in good condition.

As the cooling material can be used in diesel engines such as air, water and oil. The third ingredient of this cooling water is an excellent coolant to absorb heat. In the process of cooling, the cooling water temperature is 700C-800C ideal and as a cooling medium is fresh water and sea water. The sea water used in the cooling system but can lead to corrosion of the surface is subjected to cooling water and also the formation of hard crust on the surface that cooled so that interfere with heat transfer and create cooling channels are narrow and become clogged. With the disruption of heat transfer caused by sea water, in use the cooling system with fresh water, fresh water has the advantage that all metal surfaces subjected to water cooling avoid rust (corrosion) of the material has a higher durability and corrosion caused so much better and also did not result in the deposition of scale on a metal surface.

The cooling system on board a marine writer implementing the practice of using fresh water and sea water as the main engine cooling material. The sea water used as a coolant to absorb heat contained in the fresh water cooler. Given the importance of fresh water cooling system in the operation of aircraft engines in ships need to be considered to keep the cooling water temperature to remain normal.

Keywords: Optimizing, Main Engine Fresh Water Cooling, Hazop, MV. DK01