

## ABSTRACT

**Firdaus Hakiki**, 2018, NIT : 51145443.T, "*The Analysis of Inert Gas System Temperature Towards The Operation of Petroleum Unloading in MT. SERUI*", Program Diploma IV, Technical, Semarang Merchant Marine Polytechnic, Supervisor I : Nasri, M.T., M.Mar.E, and Supervisor II : Vega Fonsula A, S.ST., S.Pd., M.H.,

The Inert gas system is a gas mixture that does not support enough oxygen to support combustion of hydrocarbons. In MT. The inert gas is produced by the exhaust gases boiler (flue gases) and then into the scrubber tank to be lowered by temperature and cleaned by sea water by means of atomization, so that the dirt from the combustion falls down and then flows to the overboard and the clean gas and temperature are recommended to the deck water seal, then enter the cargo tank. But the fact is that the inert gas temperature is high in the inert gas system because the cooling and cleaning process of the scrubber tank is not optimal and causes the operation of crude oil to be blocked.

The purpose of this study was to determine the cause of the abnormal inert gas system temperature to the operational when unloading crude oil using the Fishbone method and Fault Tree Analysis in MT. SERUI. The Inert gas system is a system that functions to produce inert gases that are used to maintain cavities in the cargo tank so that the oxygen content in the tank is below 8%.

Based on the results of interviews, observation, documentation, and maintenance of the inert gas system, the cause of the inert gas system operating temperature is not normal, namely the decrease in sea water pressure to the tank scrubber, due to damage to the scrubber pump bearing an increase in inert gas temperature so that inert gas is more a lot of wasted into the atmosphere and enter the water seal deck a little, so that the supply of inert gas is reduced to the tank. From this problem it can be concluded that the treatment on the demister pad filter and scrubber pump bearing against the tank scrubber periodically needs to be carried out properly and in accordance with the maintenance schedule that is made, so as to know the problems as early as possible and prevent greater damage.

**Keywords** : *inert gas system*, unloading operations, *fishbone* and *FTA*