ABSTRACT

PT. Petrokimia Gresik is a fertilizer industry that uses boiler B-6201 as producer of steam for process purpose. This boiler is often having interference, it can disturb the process activities. The malfunction of a component from the boiler can also causes accident such as explosion. One of which can be done to prevent failure is by inspection activities. Determining the appropriate inspection activities will be able to support the process of production.

To minimize the risk of boiler, regular inspection schedule planning is necessary. In this study, early identification is performed using Failure Modes and Effects Analysis (FMEA) and then the results of the identification will be analyzed by using Risk Based Inspection (RBI). RBI has two risk analysis are qualitative analysis used to determine the level of risk and quantitative analysis used to determine the risk value from the boiler B-6201. Results from this quantitative analysis is used to modify the inspection program.

From the identification results of the FMEA, the biggest risk are feed pump and fire pipe. For the qualitative RBI analysis, found that the feed pump and fire pipe at medium-high risk level, while the results of RBI quantitative analysis obtained risk value is 55.9 x10^{-6} for the feed pump and 50.32 x10^{-6} for the fire pipe. With the approach of RBI, the inspection schedule for the feed pumps and fire pipe is planned in 2012. Schedule of planned inspections should be conducted in time to see the damage that may be occurred.

Keywords: Boiler, Failure Modes and Effect Analysis (FMEA), Risk Based Inspection (RBI)