ANALYSIS OF HAZARD AND OPERABILITY FOR HAZARDOUS DETECTION AND RISK MANAGEMENT IN BOILER UNIT (B-6203) IN FABRIQUE III PT. PETROKIMIA GRESIK

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Abstract

In line with the advancement in the industry and protection assurance of health, safety and environment for the workers. Thus necessary to held the study about hazard and risk management. One of the company concerns with the health safety and environment issues is PT.Petrokimia Gresik, which was one of the biggest fertilizer producer in Indonesia. During production process in PT. Petrokimia Gresik, boiler become one of highly risk equipment. Hazard analysis in this research using HAZOP method. Node study that have been identified is economizer, steam drum, superheater, and burner, which was the main component composing boiler. According to analysis result, some components having highest hazard risk are pressure indicator inlet steam drum, temperature indicator (TI-6211) *and temperature indicator outlet superheater* (TI-6214), *which had extreme risk with tehe value of using AS/NZS 4360:2004 standard. Each node in the boiler having SIL 1 criteria, with the value of risk reduction factor 50 for economizer, 39,1 for steam drum and 30 for superheater and burner, means that there having low level of system reliability. Treatment can be applied to decrease hazard risk and increase system reliability are arranging maintenance and calibration routinely, adding transmitter redundant, and arranging proof test interval in the sensor, transmitter, and final control element once a month. Highest hazard risk in the whole node of boiler is fire. Thus have been done emergency response plan analysis for fire condition to identifying the responsibilities of each division, preventing, and also handling step.*

Keywords: Risk Management, steam boiler, HAZOP, emergency response plan, SIL

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