APPLICATION OF FUZZY LOGIC METHOD IN MODELING AND RELIABILITY ANALYSIS OF BOILER FLUE GAS SYSTEM UNIT 3 AT PT. PJB GRESIK POWER UNIT

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Abstract

Fuzzy logic is one effective way to be used as the basis for determining the reliability of a system. In a broader perspective, fuzzy logic is very useful in applications of identification systems and control ill-structured, where the linearity and time invariance can not be determined with certainty. The form of such systems, if deemed conventional systems is very difficult to be modeled. This study aimed to analyze the reliability of boiler flue gas system unit 3 in the PT. PJB Gresik Power Unit with fuzzy logic method. Based on the results of reliability analysis of each system supporting the boiler flue gas with Mamdani type fuzzy logic method, obtained the most dominant system as the cause of failure is the A-air heater with the highest failure frequency, that is 24 times and the smallest MTTF values, that is 2364 hours, and have a very low level of reliability after operating for 2000 hours, that is $R(t)= 0467$.

Keyword: Fuzzy logic, reliability, boiler flue gas system