

ABSTRACT

PT. XYZ which is a State-Owned Enterprise (BUMN) engaged in gas transportation. In supporting the production process of PT. XYZ uses a Turbine Compressor engine. The Turbine Compressor engine functions to compress gas, this machine suppresses natural gas that is processed or processed and distributed using pipelines. The Gas Turbine engine is one of the machines that works for a long time, the C-101-AT Gas Turbine engine which suffered 37 damage to the Turbine Compressor engine in 4 years. based on these problems, research is needed to assess the machine using the Reliability, Availability, Maintainability and Safety (RAMS) method, the safety value is in the form of the Safety Integrity Level (SIL). Based on RAMS analysis calculations using the Reliability Block Diagram (RBD) modeling and analytical approach, the reliability value on the C-101-AT Gas Turbine engine with a time span of 163 to 3177 hours, the results obtained when $t = 163$ hours are 98.03%, and when this is $t=3117$ hours 36.49%. System maintainability value to reach 100% takes $t=7$ hours. The inherent availability system value is 99.95 and the operational availability system value is 99.99%. The C-101-AT Gas Turbine gets a Safety Integrity Level score at the lowest level, namely 1. Seeing the high availability of the machine and the low reliability of the engine system. then carry out maintenance planning and carry out additional reviews on daily checks by checking the running system, checking the subsystems on the machine, and checking the temperature of the engine, and designing the operating pattern of the machine once a month.

Keywords: ***Maintenance, Gas Turbine, Reliability, Availability, Maintainability, Safety, Safety Integrity Level (SIL).***