

ABSTRACT

PT XYZ is a company that produces oil and gas. One of the tools used for the process of oil and gas production is the gas distribution pipe (pipe), in the TGA gas pipeline # 2 owned by PT XYZ once discussed the occurrence of leaking pipes in segment 3 1 time, the company appeared related to increased production and the danger of gas being released to the surrounding environment. Prevention that the TGA # 2 pipe still has good performance is done by optimizing inspection & maintenance. The method used is Risk-Based Inspection & Maintenance (RBI & M) based on API 581 reference.

RBI & M is a method used for risk-based inspection and treatment, the purpose of this study is to determine the level of risk of failure, estimated life remaining, estimated economic life, optimal inspection and maintenance, and effective and cost-effective replacement policies in terms of time and cost.

From the results of the risk matrix, segments 1 and 2 have very low and low risk levels, and segment 3 has a high risk level that affects the level of speed, so this study will be discussed in segment 3 where the treatment and maintenance intervals will be made according to the residual results life and remaining life. This is done so that pipes in segment 3 remain in good performance in the oil and gas production process.

Refers to risk 3 in segment 3, so the value of the risk can affect the rest of life, economic life, and risk costs. This can be minimized by using the cut and replace level and top level analysis methods.

Key Words: Risk Based Inspection, Risk Based Maintenance, Probability of Failure, Consequences of Failure, API 581.