

## **ABSTRACT**

*PT. XYZ is one of the units of oil and gas processing companies that produce fuel oil products, non-fuel oil products, and petrochemical products. Piping is a piping system used to drain fluid from one process to another. Piping type at PT. XYZ, one of them is Hydrocarbon Piping as a fluid distributor between reactor, regenerator, and main column in catalytic cracking process. Flowing fluid can cause corrosion and cause thinning and even leakage of pipes causing bad impact on the environment, security, safety and loss of costs. Pressurized equipment such as piping requires an inspection program to work properly. Risk Based Inspection (RBI) is a method for determining inspection program plans based on the risk of equipment failure. The RBI method used is Semi-Quantitative RBI with API 581. The purpose of this study was to determine the level of risk, estimated inspection intervals, and determination of inspection methods on piping in the application of the RBI method on Hydrocarbon Piping at PT. XYZ The results showed that based on the RBI risk matrix, Hydrocarbon Piping consists of 16% pipes with low risk levels and 84% pipes with medium risk levels. Based on the level of risk obtained and remaining life, the recommended inspection interval does not exceed half the pipe's remaining life. With thinning damage mechanism and fairly effective inspection effectiveness category, the main inspection methods recommended are profile radiography, UT scans, and visual examination.*

*Keyword: Inspection Interval, Level of Risk, Piping, Remaining Life, Risk Based Inspection*