ABSTRACT

PT. XYZ is a company that conducts business in the oil and gas sector. The business sectors that are run are upstream and downstream. Storage tanks are places used to store oil products before they are distributed to consumers. Inside a refinery storage tank has a diverse design based on its function or the type of fluid it holds. In the storage tank system, there are 13 subsystems: pipe, pressure relief valve, pressure vacuum valve, foam chamber, manhole, slot dipping device, automatic gauge tank, flexible pipe, splash plate, roof handrailing, grounding cable, product drainage, and storage tank. Risk Based Inspection (RBI) is a risk-based approach to prioritizing and planning inspections, especially the oil and gas industry. The RBI method used is the Semi-Quantitative RBI method, which is a method that combines Qualitative RBI and Quantitative RBI methods. The purpose of this study is to determine the inspection interval, estimated lifetime, and determine the appropriate maintenance policy on the storage tank. By using the Analytical Hierarchy Process (AHP) method it can be seen that the maintenance policy is appropriate for the storage tank. In determining the appropriate maintenance policy there are criteria and alternatives. The criteria are safety, cost, added value, and feasibility. While the alternatives are preventive maintenance, condition based maintenance, corrective maintenance, and reliable centered maintenance. From the research results it can be seen the remaining age of the storage tank is 40, the proposed inspection interval is 2 years, and the appropriate maintenance policy is Reliable Centered Maintenance (RCM).

Keywords: Risk Based Inspection, Analytical Hierarchy Process, Maintenance Stretegy, Risk Matrix, Storage Tank, Remaining Life