APPLICATION AHP METHOD – INDEX MODEL TO SELECT PRODUCTION PIPE LINE MAINTENANCE PROGRAM IN PT X

By: Seto Uditoyo Subagyo
Student Identity Number: 9111 202 719
Supervisor: Prof. Dr. Ir. Udisubakti Ciptomulyono, MEngSc

ABSTRACT

Prioritization Pipeline Maintenance Program for production pipeline network distribution at PT X northern region is still not integrated and effective to address decline trending pipelines network reliability and effectiveness of improvement reliability project investment. This is because decision makers often difficult to determine the right priorities for complex condition of facilities and influenced by many factors that can not be quantified, making it difficult to distinguish which factor is more important than the others. The contradiction is what caused the failure in developing maintenance programs that can have an impact on human safety, the environment, and loss of assets. The decision maker has to use effective method to manage the complexity production pipe line network risks through this research, namely the Index Model method need to combine with decision making method AHP (Analytical Hierarchy Process). The study comparison of Risk Management Matrix method with AHP index model as the next part of this research. This study aimed to get critical factor to determin failure risk of design (design index) = 0.13, corrosion (corrosion index) = 0.47, failure of operation (operation failure index) = 0.25, distruption of community surrounding (third party index) = 0.15. The critical factor and sub factor is the basis of more appropriate reliability pipeline network maintenance program development to reduce failure risks and obtained a solution to increase the reliability in PT X. The advantage of the AHP-Index model method compare to Risk Management Matrix is on capability to recognize the specific pipeline maintenance program that required, and more effective to differentiate the prioritization.