SUMMARY

PRABONO ROESHRDIANTO. Risk Analysis and Mitigation Strategies on the Engineering, Procurement and Construction (EPC) in Minihydro Power Plant Development in PT XYZ. Supervised by HERMANTO SIREGAR and LUKYTAWATI ANGGRAENI.

The demand for electricity in Indonesia has been escalating rapidly for the past years. One of the priorities to fulfill the demand is by developing mini hydro power. However, the potential risk of implementation can arise at any stages of EPC process. XYZ is a EPC contractor company facing problems in managing risk.

The objectives of this study are to identify risks and measuring the magnitude of the risk and develop effective risk mitigation strategies. The first objective (risk identification) is answered using a literature review and discussion of the stakeholders. Researchers identified about 53 risk factors faced by XYZ in the development of EPC minihydro power project. Researchers divided in 5 aspects: the financial aspect as 4 variables risks, aspects of contract administration by 4 variables risks, aspects of project implementation (process EPC) a total of 36 variables, environmental aspects as 6 variables and aspects of government regulation as 3 variables.

The second objective (to measure importance level of risk variable) is answered using the Relative Important Index (RII) method. The results of the research is 22.64 % of the 53 risk variables that have been identified. The top three variables : plant availability and low reliability; changes in currency exchange rates; experience and ability of detailers and designers are small.

The third objective (priority mitigation strategy) be answered using AHP. The results showed that improvement in the is a major concern of the respondents. The second step of priority are improvement in engineering process.

Keywords: Mitigation strategy, Risk identification, Mini hydro EPC project, AHP, RII