

ABSTRACT

The BWRO 1000 CMD construction project by PT XYZ faces potential delays that may significantly impact the achievement of project timelines, cost efficiency, and the quality of deliverables. These risks arise from various construction activities, including civil, mechanical, and electrical works, requiring a systematic risk management approach to prevent disruptions during project execution.

This study applies the Failure Mode and Effect Analysis (FMEA) method to identify, analyze, and evaluate potential risks based on three key parameters: severity, occurrence, and detection. These parameters are calculated into a Risk Priority Number (RPN), which serves as the basis for determining risk handling priorities. Risks with the highest RPN values are prioritized in the structured development of a risk treatment strategy.

A total of 58 risks were identified and classified according to the respective project work categories. The results indicate that the FMEA method is effective in designing a targeted and practical risk register and risk treatment strategy. This approach supports optimal risk control and contributes to the overall success of the BWRO 1000 CMD project in terms of time, cost, and quality.

Keywords: *BWRO, risk management, FMEA, risk register, risk treatment*