

ABSTRACT

The construction of power plants in Indonesia in the Fast Track Program 1 (FTP-1) 2006-2009 was delayed by 5 years and only about 74% were completed. Project implementation delays are directly proportional to Cost Overrun. M-PERT is very effective in project optimization, with project optimization nearly 99%. This study uses a combination of statistical research and is validated against a case study. For the initial stage statistics, 42 respondents from professionals in their fields were used and analyzed using the Relative Importance Index (RII). At the validation stage, the case study uses the Manual Program Evaluation and Review Technique (M-PERT) method to get time accuracy, then uses the Activity Based Costing (ABC) method to get construction cost efficiency. Validation of this research case study focused on the construction project of the Keban Agung Steam Power Plant Sub-Structure (PLTU), Lahat, South Sumatra. The analysis resulted in influencing factors, namely the project management process (RII = 4,833), determining the activity to start (RII = 4,690), quality control (RII = 4,643), activity preparation strategy (RII = 4,595) and contract scheduling on time (RII = 4,500) which was followed up using M-PERT and ABC. Time performance optimization is 98.52% and construction costs can be optimized from the previous 98.98%.

Keywords: *Manual Program Evaluation and Review Technique (M-PERT), Activity Based Costing (ABC), Relative Importance Index (RII), Coal Fired Power Plant.*

MERCU BUANA

ABSTRAK

Pembangunan Pembangkit Listrik di Indonesia pada program *Fast Track Program* 1 (FTP-1) 2006-2009 mengalami keterlambatan 5 Tahun dan hanya sekitar 74% yang terselesaikan. Keterlambatan pelaksanaan proyek berbanding lurus dengan *Cost Overrun*. *M-PERT* sangat efektif dalam optimasi proyek, dengan optimasi proyek hampir mencapai 99%. Penelitian ini menggunakan kombinasi penelitian statistik dan divalidasi terhadap studi kasus. Untuk statistik tahapan awal menggunakan 42 responden dari kalangan profesional di bidangnya dan dianalisis menggunakan *Relative Importance Index (RII)*. Pada tahap validasi studi kasus menggunakan metode *Manual Program Evaluation and Review Technique (M-PERT)* untuk mendapatkan akurasi waktu, kemudian menggunakan metode *Activity Based Costing (ABC)* untuk mendapatkan efisiensi biaya konstruksi. Validasi studi kasus penelitian ini difokuskan pada proyek pembangunan *Sub-Structure* Pembangkit Listrik Tenaga Uap (PLTU) Keban Agung, Lahat, Sumatera Selatan. Analisis menghasilkan faktor-faktor yang mempengaruhi yaitu Proses management proyek (RII=4.833), Menentukan kegiatan dimulai (RII=4.690), Pengendalian mutu (RII=4.643), Strategi persiapan kegiatan (RII=4.595) dan Penjadwalan kontrak tepat waktu (RII=4.500) yang ditindaklanjuti dengan menggunakan M-PERT dan ABC. Optimasi kinerja waktu yaitu sebesar 98,52%. dan biaya konstruksi dapat dioptimasi dari sebelumnya 98,98%..

Kata Kunci : Manual Program Evaluation and Review Technique (M-PERT), Activity Based Costing (ABC), Relative Importance Index (RII), Coal Power Plant.