ANALISIS WAKTU DAN BIAYA DENGAN METODE *CRASHING*, *OVERLAPPING* DAN GABUNGAN *CRASHING OVERLAPPING*

(Studi Kasus Proyek Pembangunan Bendungan Bendo Lanjutan di Kab Ponorogo Jawa Timur)

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ABSTRAK

Penjadwalan merupakan hal yang krusial dalam sebuah proyek konstruksi dengan penyusunan proses penjadwalan harus dibuat detail agar dapat membantu pelaksanaan proyek yang efektif dan efisien. Pelaksanaan Proyek Pembangunan Bendungan Bendo Lanjutan Kab Ponorogo Jawa Timur dimulai tanggal 13 Desember 2019 direncanakan selesai pada tanggal 31 Desember 2021 namun pada pelaksanaannya mengalami keterlambatan dalam pelaksanaannya, semua factor tersebut dapat berdampak besar terhadap waktu dan biaya pada proyek tersebut, maka diperlukan analisis metode percepatan yang paling optimal dan efisien.

Studi ini bertujuan untuk menganalisis waktu dan biaya proyek jika dilakukan percepatan (*crashing*) dengan penambahan jam kerja lembur atau penambahan tenaga kerja dan alat, metode tumpang tindih (*overlapping*), metode gabungan antara percepatan (*crashing)* dan tumpang tindih (*overlapping*), yang terakhir bertujuan untuk mengkaji waktu dan biaya yang paling optimal dengan menggunakan alternatif *crashing*, *overlapping* dan gabungan antara *crashing overlapping*. Data yang dibutuhkan dalam penelitian ini adalah data sekunder berupa data time schedule dan laporan mingguan proyek, RAB, jumlah tenaga kerja. Analisis kemudian dilakukan untuk mengetahui waktu dan biaya akibat percepatan dengan penambahan jam kerja, penambahan tenaga kerja dan alat, overlapping dan gabungan *crashing overlapping*, selanjutnya dapat dicari perbandingan waktu dan biaya yang optimum dari lima alternative tersebut.

Dari hasil 5 perhitungan dapat disimpulkan bahwa waktu dan biaya akibat percepatan yang optimum adalah metode gabungan *crashing* dan *overlapping* dengan penambahan tenaga kerja dan alat serta mengubah *relationship* dan *lag* didapat pengurangan biaya sebesar Rp 8.042.380.684 dari total biaya pekerjaan normal yang jumlahnya sebesar Rp 287.227.881.577 menjadi Rp 279.185.500.893 atau turun 2,800 % dari total biaya pekerjaan normal dengan pengurangan durasi pekerjaan waktu selama 350 hari dari waktu normal 750 hari menjadi 400 hari.

Kata Kunci : *Percepatan proyek, Metode crashing, Metode Overlapping, Kombinasi*

TIME AND COST ANALYSIS WITH CRASHING, OVERLAPPING AND COMBINED CRASHING OVERLAPPING METHODS

(A Case Study of Advanced Bendo Dam Construction Project at Ponorogo Regency, East Java)

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ABSTRACT

Scheduling is a crucial thing in a construction project with the preparation of the scheduling process must be made in detail in order to assist in the effective and efficient implementation of the project. The implementation of the Advanced Bendo Dam Development Project, Ponorogo Regency, East Java, starting on December 13, 2019 is planned to be completed on December 31, 2021, but in its implementation there is a delay in its implementation, all of these factors can have a major impact on the time and cost of the project, so an analysis of the acceleration method is needed most optimal and efficient.

This study aims to analyze the time and cost of the project if it is accelerated (crashing) by adding overtime hours or adding labor and tools, the method of overlapping (overlapping), the combined method of acceleration (crashing) and overlapping (overlapping), the last aims to examine the most optimal time and cost by using alternative crashing, overlapping and a combination of crashing overlapping. The data needed in this study is secondary data in the form of time schedule data and project weekly reports, RAB, number of workers. The analysis is then carried out to determine the time and cost due to acceleration with additional working hours, additional labor and tools, overlapping and combined crashing overlapping, then the optimum comparison of time and cost of the five alternatives can be sought.

From the results of 5 calculations, it can be concluded that the optimum time and cost due to acceleration is the combined method of crashing and overlapping with the addition of labor and tools and changing the relationship and lag, a cost reduction of Rp 8,042,380,684 is obtained from the total cost of normal work which amounts to Rp 287,227. 881,577 to Rp 279,185,500,893 or a decrease of 2,800% from the total cost of normal work with a reduction in the duration of work time for 350 days from the normal time of 750 days to 400 days.

Keywords : *Project Acceleration, Crash Method, Overlapping Method, Combine*