

## ABSTRAK

Proyek RS Royal Extension yang ditargetkan selesai dalam 450 hari sejak bulan juli 2021 mengalami keterlambatan dalam pelaksanaannya. Baik pada laporan mingguan maupun bulanan menunjukkan perbedaan antara rencana dan realisasi, serta adanya deviasi antara kurva-S rencana dan realisasi terindikasi dalam *master schedule*. Hal ini menunjukkan adanya keterlambatan penyelesaian proyek sebesar 1,94% hingga bulan febuari dari rencana awal ataupun kontrak. Keterlambatan diakibatkan oleh beberapa faktor, yaitu material dan cuaca yang tercantum dalam laporan harian. Dengan dasar permasalahan ini, penelitian dilaksanakan untuk mengendalikan material yakni besi dan semen ready mix yang digunakan pada aktifitas kritis proyek dengan metode MRP I. Aktifitas kritis di-analisis dengan metode CPM dan metode PERT untuk *diagram network*. Kemudian kebutuhan material direncanakan ulang menggunakan teknik *lot sizing* EOQ. Hasil penelitian diperoleh jumlah *lot* pemesanan material besi polos API25 adalah 222 batang, besi ulir U32 adalah 295 batang, wiremesh M12 adalah 117 lembar. Sehingga dapat ditarik kesimpulan waktu pemesanan material besi polos API25 dikakukan yakni pada pekan ke-8,10,11,12,14,16,18,20,22,24,30,32 dengan biaya pengadaan Rp 3.690.926 kemudian material besi ulir U32 pada pekan ke-8,10,11,12,14,16,18,20,22,24,30,32 dengan biaya pengadaan Rp 5.284.781 dan wiremesh M12 pada pekan ke-9,12,16,20,24,28,32 dengan biaya pengadaan Rp 2.175.502.

**Kata Kunci :** *Critical Path Method, Program Evaluation and Review Technique, Material Requirement Planning I, Economic Order Quantity, Lot for Lot.*

## ABSTRACT

*The Royal Extension Hospital project which is targeted to be completed in 450 days from July 2021 has experienced delays in its implementation. Both the weekly and monthly reports show the difference between the plan and the realization, as well as the deviation between the S-curve of the plan and the realization indicated in the master schedule. This shows that there is a delay in project completion of 1.94% until February from the initial plan or contract. Delays are caused by several factors, namely materials and weather listed in the daily report. Based on this problem, the research was carried out to control the materials, namely iron and ready mix cement used in critical project activities using the MRP I method. Critical activities were analyzed using the CPM method and the PERT method for network diagrams. Then the material requirements are re-planned using the EOQ lot sizing technique. The results of the study obtained that the number of orders for API25 plain iron material was 222 rods, U32 threaded iron was 295 rods, M12 wiremesh was 117 pieces. So it can be concluded that when ordering API25 plain iron material is rigid, namely in the 8th week, 10, 11, 12, 14, 16, 18, 20, 22, 24, 30, 32 with a procurement cost of Rp. 3,690,926 then screw iron material. U32 in week 8,10,11,12,14,16,18,20,22,24,30,32 with procurement costs Rp 5,284,781 and wiremesh M12 on week 9,12,16,20, 24,28,32 with a procurement cost of Rp 2,175,502.*

**Key words :** *Critical Path Method, Program Evaluation and Review Technique, Material Requirement Planning I, Economic Order Quantity, Lot for Lot.*