IMPLEMENTASI *LINE BALANCING* DENGAN METODE *LARGEST CANDIDATE RULE* DAN METODE *RANGKED POSITION WEIGHT* UNTUK MENDAPATKAN JALUR KERJA YANG EFISIEN

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ABSTRAK

CV Putra Ortega Karya Abadi memiliki jumlah permintaan 4 unit tiap bulan produk pintu air tipe *Gearbox Double Spindle*. Dua bulan terakhir terjadi masalah keterlambatan pada proses produksi. Keterlambatan target yang harusnya selesai dalam satu bulan, terlambat menjadi satu bulan 10 hari. Terjadi penumpukan barang pada proses pengelasan dengan waktu total pengerjaan 41 jam 10 menit 9 detik. Hal ini menyebabkan beban kerja pada stasiun pengelasan lebih berat dibanding stasiun lainya dan terjadi waktu menganggur yang cukup lama. Oleh karena itu perlu dilakukan penyeimbangan lini stasiun kerja agar beban kerja tiap stasiun merata. *Line balancing* dapat dilakukan dengan metode *Largest Candidate Rule* dan *Rangked Positional Weight*. LCR dan RPW adalah dua metode yang sering digunakan dalam line balancing. LCR dapat membantu dalam mencapai keseimbangan beban kerja yang relatif merata antara pekerjaan yang harus dilakukan. Sementara itu, RPW metode yang mengurutkan pekerjaan berdasarkan berat posisi relatif di aliran kerja. Hasil *line balancing* didapatkan RPW memiliki *line efficiency* (91.83%), *balance delay* (8.17%), dan *smoothing index* (62.984,6). LCR memiliki *line efficiency* (66,72%), *balance delay* (33.28%), dan *smoothing index* (172,383.64). Sehingga metode RPW dipilih sebagai metode terbaik dan dapat memperbaiki kondisi *line balancing* perusahaan. Peningkatan *line efficiency* dengan kedua metode dapat terjadi karena adanya pengurangan jumlah stasiun kerja yang semula berjumlah 10 stasiun kerja menjadi 3 stasiun kerja untuk LCR dan 5 stasiun kerja untuk RPW Meskipun keduanya merupakan metode heuristik yang digunakan dalam perencanaan line balancing, pendekatan dan logika di balik LCR dan RPW berbeda.

Kata Kunci: Keseimbangan Lintasan, RPW, LCR, Stasiun Kerja

IMPLEMENTATION OF LINE BALANCING USING THE LARGEST CANDIDATE RULE METHOD AND THE RANKED POSITION WEIGHT METHOD TO GET AN EFFICIENT WORKLINE

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ABSTRACT

CV Putra Ortega Karya Abadi has a number of requests for 4 units each month of Double Spindle Gearbox type sluice products. The last two months there was a problem of delays in the production process. The target delay, which should have been completed in one month, was one month and 10 days late. There was a buildup of goods in the welding process with a total processing time of 41 hours 10 minutes 9 seconds. This causes the workload at the welding station to be heavier than other stations and there is a long idle time. Therefore, it is necessary to balance the work station lines so that the workload of each station is evenly distributed. Line balancing can be done using the Largest Candidate Rule and Rangked Positional Weight methods. LCR and RPW are two methods that are often used in line balancing. LCR can assist in achieving a relatively even workload balance between the work to be done. Meanwhile, the RPW method sorts jobs based on relative position weight in the work stream. The line balancing results show that RPW has line efficiency (91.83%), balance delay (8.17%), and smoothing index (62,984.6). LCR has line efficiency (66.72%), balance delay (33.28%), and smoothing index (172,383.64). Thus, the RPW method was chosen as the best method and can improve the condition of the company's line balancing. Improved line efficiency with both methods can occur due to a reduction in the number of work stations which originally numbered 10 work stations to 3 work stations for LCR and 5 work stations for RPW. Although both are heuristic methods used in line balancing planning, the approach and logic behind LCR and RPW are different.

Keywords: *Track Balance, RPW, LCR, Work Station*

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