

Calculating Overall Equipment Efficiency for Management Decision

Shocking OEE and the Correct Performance

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Abstract

Overall Equipment Efficiency (OEE) is the specific metric for Total Productive Maintenance (TPM) approach of achieving production efficiency. In order to take advantage of such approach OEE and its structural elements must be defined and calculated in a manner enabling the management to make the appropriate improvement decisions. This work proposes a changed structure and calculation manner for OEE and its components aiming to provide management with the adequate information for the decision process concerning the systematic achievement of equipment efficiency.

Keywords: Overall Equipment Efficiency (OEE), Total Productive Maintenance (TPM), process flow simulation, Work in Progress (WIP), productivity, hourly consumption

References:

1. Gibbons P. M., Burgess S. C., Introducing OEE as a measure of lean Six Sigma capability, *International Journal of Lean Six Sigma*, Vol. 1, No. 2, pp 134-156, 2010.
2. Huang S.H., Dismukes J.P., Shi J., Su Q., Razzak M. A., Bodhale R, Robinson D. E., Manufacturing productivity improvement using effectiveness metrics and simulation analysis, *Journal for Production Resources*, Vol. 41, No. 3, , 2003, pp. 513-527.
3. Iannone R., Nenni E., Managing OEE to Optimize Factory Performance, Ch. 2 in *Operation Management*, edited by M. M. Schiraldi, ISBN 978-953-51-1013-2, Publisher InTech, 2013.
4. Ivancic I., Development of Maintenance in Modern Production, *Proceedings of 14 th European Maintenance Conference, EUROMAINTENANCE*, Dubrovnik, Hrvatska, October 1998, pp. 5-7.
5. Muthiah K. M., Huang S. H., Overall throughput effectiveness (OTE) metric for factory-level performance monitoring and bottleneck detection, *International Journal of Production Research*, Vol. 45, Iss. 20, pp 4753-4769, 2007.
6. Nakajima S. , *Introduction to TPM*, Prod Press, New York, 1988.
7. Raouf A., Improving Capital Productivity Through Maintenance, *International Journal of Operations & Production Management*, Vol. 14, Issue 7, 1994, pp. 44-52.
8. Schiraldi M. M., (editor), *Operations Management*, Publisher: InTech, ISBN 978-953-51-1013-2, 2013.
9. Shahin A., Attarpour M. R., Developing Decision Making Grid for Maintenance Policy Making Based on Estimated Range of Overall Equipment Effectiveness, *Modern Applied Science*, ISSN 1913-1852 (Online) Vol. 5, No. 6, pp. 86-97, 2011.

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10. Zammori , Braglia M., Frosolini M., Stochastic Overall Equipment Effectiveness, International Journal of Production Research, Vol. 49, Iss. 21, pp. 6469-6490, 2011.