# ANALISIS IMPLEMENTASI METODE *LEAN SIX SIGMA* UNTUK PENGENDALIAN KUALITAS PROSES DAN KUALITAS PRODUK PIPA SNI 0039 MEDIUM DI VAI-4 *PLANT* PT. BAKRIE PIPE INDUSTRIES

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## ABSTRAK

Penelitian ini bertujuan untuk mengetahui dan melakukan analisis nilai Metrik *Lean* proses produksi VAI-4 *Plant* dan membandingkan *Process Cycle Efficiencies* proses produksi VAI-4 *Plant* dengan *Typical Cycle Efficiencies* dan *World Class Cycle Efficiencies*; mengetahui dan melakukan analisis nilai sigma produk pipa SNI 0039 MEDIUM pada VAI-4 *Plant;* serta memberikan usulan perbaikan kualitas proses dan kualitas produk dengan menggunakan pendekatan *Lean Six Sigma* dengan metode DMAIC. Pendekatan *Lean Six Sigma* diharapkan dapat mengidentifikasi dan menghilangkan pemborosan atau aktivitas-aktivitas yang tidak bernilai tambah melalui peningkatan kinerja *six sigma*. Diketahui bahwa nilai *process cycle efficiency* sebesar 2,33% dibandingkan dengan nilai *process cycle efficiency* perusahaan sejenis sebesar 10% dan standar dunia sebesar 25%; nilai *process lead time* sebesar 3,27 hari; dan nilai *process velocity* 7,32 proses/ hari. Kegiatan tidak bernilai tambah terbesar adalah pada saat proses pipa menunggu untuk dipindahkan ke proses inpeksi *hydrotest* sebesar 80,13%. Nilai sigma untuk produk pipa SNI 0039 MEDIUM adalah sebesar 3,82. Berdasarkan hasil analisis menggunakan Ishikawa Diagram, penyebab kecacatan dikelompokan berdasarkan kategori *man, machine, material*, dan *method* dimana dalam kategori *man* dan *machine* ditemukan penyebab terjadinya kecacatan paling banyak.

Kata Kunci : *Lean Six Sigma*, DMAIC, Metrik *Lean*, *process cycle efficiency,non value added* activity, Ishikawa Diagram

# ANALYSIS OF IMPLEMENTATION LEAN SIX SIGMA METHOD TO CONTROL PROCESS QUALITY AND PRODUCT QUALITY OF SNI 0039 MEDIUM PIPE IN VAI-4 PLANT PT. BAKRIE PIPE INDUSTRIES

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## ABSTRACT

*This study aims to identify and analize the Lean Matric of VAI-4 Plant production process and compare with typical process cycle efficiency and world class cycle efficiency; to identify and analize sigma value of SNI 0039 MEDIUM; and proposed corrective actions of process and product quality using Lean Six Sigma and DMAIC method. Lean Six Sigma approach expected to indentify and eliminate all waste or non value added activities. Process cycle efficiency of VAI-4 Plant is 2,33% as compared to typical process cycle efficiency which is 10% and world-class process cycle efficiency which is 25%, process lead time is 3,27 days, and process velocity is 7,32 process/ day. The biggest non value added activity is when pipe waiting to transfer to hydrotest inspection test which is 80,13%. Based on Ishikawa Diagram's analysis, the cause of defective products is grouped based on category man, machine, material, and method which is in man and machine category are found to be the biggest cause of defect.*

*Keyword* : *Lean Six Sigma*, DMAIC, Metrik *Lean*, *process cycle efficiency,non value added activities, Ishikawa Diagram.*