

ABSTRAK

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Judul Laporan Akhir : Analisis dan Pengendalian Produk Tidak Sesuai
(NG) Pada *Battery Pack* Divisi *Quality Control*
PT *Gotion Green Energy Solutions* Bogor

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Analisis dan Pengendalian Produk Tidak Sesuai (NG) pada *Battery Pack* Divisi *Quality Control* PT *Gotion Green Energy Solutions* Bogor Industri kendaraan listrik memerlukan sistem pengendalian kualitas yang efektif untuk menjamin keamanan, keandalan, dan performa *Battery Pack*. Produk tidak sesuai (*Non Good/NG*) yang terjadi selama proses produksi dapat meningkatkan biaya perbaikan, mengurangi efisiensi proses, dan menurunkan kualitas produk. Berdasarkan hasil observasi di Divisi *Process Quality Control* (PQC) PT *Gotion Green Energy Solutions* Bogor, masih ditemukan berbagai produk tidak sesuai pada proses *Integrated Cover Laser Welding* dan *Air Tightness Test*. Penelitian ini bertujuan mengidentifikasi jenis defect yang dominan, menganalisis faktor-faktor penyebab terjadinya produk tidak sesuai (NG), serta menyusun usulan tindakan perbaikan untuk meningkatkan kualitas *Battery Pack*. Metode penelitian yang digunakan adalah deskriptif dengan pendekatan studi kasus. Pengumpulan data dilakukan melalui observasi, wawancara, dokumentasi, dan pengamatan langsung terhadap proses produksi. Data dianalisis menggunakan *Checksheets*, Diagram Pareto, *Fishbone Diagram*, dan *5 Why Analysis*, sedangkan usulan perbaikan disusun menggunakan metode PDCA (*Plan-Do-Check-Action*). Hasil penelitian menunjukkan bahwa defect dominan pada proses *Integrated Cover Laser Welding* adalah *Black Hole* sebesar 56,14%, sedangkan pada proses *Air Tightness Test* adalah *Leak* >90 Pa sebesar 56,63%. Penyebab utama defect berasal dari faktor manusia, mesin, material, metode, dan lingkungan, seperti kondisi *protective lens* yang kotor, posisi busbar yang tidak sesuai, ketidaksempurnaan proses *sealing*, serta inspeksi yang belum optimal. Implementasi usulan perbaikan melalui standarisasi proses inspeksi, peningkatan perawatan peralatan, dan pengendalian proses berhasil menurunkan defect *welding* sebesar 78,33%, *Black Hole* sebesar 83,78%, defect *Air Tightness Test* sebesar 91,23%, dan *Leak* >90 Pa sebesar 94,29%, sehingga mampu meningkatkan efektivitas pengendalian kualitas *Battery Pack* serta mengurangi terjadinya produk tidak sesuai pada proses produksi.

Kata Kunci: *Quality Control*, *Battery Pack*, Produk Tidak Sesuai (NG), Diagram Pareto, *Fishbone Diagram*, PDCA.

ABSTRACT

Analysis and Control of Non-Conforming Products (NG) in the Battery Pack Quality Control Division at PT Gotion Green Energy Solutions Bogor

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DIPLOMA–III MECHANICAL ENGINEERING STUDY PROGRAM
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Analysis and Control of Non-Conforming Products (NG) in the Battery Pack Quality Control Division at PT Gotion Green Energy Solutions Bogor The electric vehicle industry requires an effective quality control system to ensure the safety, reliability, and performance of battery packs. Non-conforming (NG) products generated during the production process can increase repair costs, reduce production efficiency, and lower product quality. Based on observations conducted in the Process Quality Control (PQC) Division of PT Gotion Green Energy Solutions Bogor, various non-conformities were identified in the Integrated Cover Laser Welding and Air Tightness Test processes. This study aims to identify the dominant defects, analyze the factors causing non-conforming products, and propose improvement actions to enhance battery pack quality. The research employed a descriptive method with a case study approach. Data were collected through observations, interviews, documentation, and direct observations of the production process. The data were analyzed using Check Sheets, Pareto Diagrams, Fishbone Diagrams, and the 5 Why Analysis, while improvement proposals were developed using the PDCA (Plan-Do-Check-Act) method. The results indicate that the dominant defect in the Integrated Cover Laser Welding process was Black Hole, accounting for 56.14%, while the dominant defect in the Air Tightness Test process was Leak >90 Pa, accounting for 56.63%. The main causes of these defects were related to human, machine, material, method, and environmental factors, including contaminated protective lenses, improper busbar positioning, imperfect sealing processes, and inadequate inspection procedures. The proposed improvements, including inspection standardization, equipment maintenance, and process control, reduced overall welding defects by 78.33%, Black Hole defects by 83.78%, Air Tightness Test defects by 91.23%, and Leak >90 Pa defects by 94.29%. These improvements effectively enhanced the quality control system and reduced the occurrence of non-conforming products in the battery pack production process.

Keywords: *Quality Control, Battery Pack, Non-Conforming Product (NG), Pareto Diagram, Fishbone Diagram, PDCA.*