

Holds a B. Sc. in Electrical Power & Machines Engineering and has 5+ years of hands-on experience delivering field service, O&M, and power generation troubleshooting across oil & gas, marine, and industrial environments in Egypt and KSA. Proven expertise in CAT/Olympian/Perkins Cummins engines, and alternators including Stamford MeccAlte and Lorey Somer, with strong capability in synchronization, load sharing, and voltage regulation using DSE 8610, EasyGen 3000 XT, and MX321/MX322 AVR. Skilled in diagnosing 12V/24V DC systems, CAN/CAT/RS485 datalinks, ECM setup and reporting (CAT ET), and performing winding insulation/resistance testing, switchgear/ATS troubleshooting, and control panel modifications to meet site requirements. Recognized for strong safety awareness, technical documentation, and team leadership, with a track record of reducing MTTR through structured predictive and CBM, RCA, and reliable execution under high-pressure field conditions.

PERSONAL DATA

Nationality : Egyptian
Gender : Male
Residence : Currently KSA

EDUCATION

: B. Sc. in Electrical Power & Machines Engineering, Tanta University, 2020

LANGUAGES

Arabic : Native Language
English : Good

COMPUTER SKILLS

: Windows, MS Office, Internet

TRAINING COURSES AND CERTIFICATIONS

- : Certified Maintenance & Reliability Professional CMRP – SMRP.
- : Basic Electricity – Mantrac: Fundamentals of AC & DC systems, protection concepts, applications, and safety practices.
- : Basic Hydraulics – Mantrac: Principles of fluid behavior, hydraulic schematics interpretation, valve functions, pumps, and motors.
- : Basic Power Train – Mantrac: Diagnosis and operation of transmission systems including hydrostatic drives, gear systems, and torque converters.
- : Basic Engine Systems – Mantrac: Comprehensive understanding of engine components, operating principles, and sensor impact on engine performance.

- : HEUI, MEUI & EUI Fuel Systems – Mantrac: Detailed study of electronic fuel injection systems and their effect on engine behavior and diagnostics.
- : Electronic Troubleshooting – Mantrac: Advanced troubleshooting of CAT electrical systems, ECMs, sensors, solenoids, and electronic circuits.
- : Advanced Electric Power Generation – Mantrac: Operation and diagnostics of CAT gas engines (e.g., G3606, G3612), including post-failure analysis techniques.
- : Failure Analysis – Mantrac: Root cause analysis of failures such as fatigue, cyclic beach marks, and material manufacturing defects.
- : C175 Diesel Engine – Mantrac: Technical overview of CAT C175 engines, common rail systems, and large-engine operational concepts.
- : CAT Electric Power II – Mantrac: Load sensing, load sharing, synchronization techniques, and power generation control strategies.
- : CAT Marine Engines – Mantrac: Marine engine systems, applications, and CAT marine technology integration.
- : Microsoft Excel – Coursera: Data handling, reporting, and basic analysis for technical and maintenance documentation.
- : Drilling & Oil Refinery Processes – Coursera: Overview of drilling operations and oil extraction processes for onshore and offshore facilities.
- : Classic Control Systems: Application of electrical fundamentals to control circuits and implementation of system modifications.
- : PLC Fundamentals: Programming and applying programmable logic controllers for industrial control systems.
- : CAT OSHA & Safety Training: Risk assessment, lifting operations safety, PPE usage, and hazard prevention in heavy equipment environments.
- : Six Sigma Fundamentals: Principles of process improvement, waste reduction, team leadership, and performance optimization.

CHRONOLOGICAL EXPERIENCE RECORD

Dates	: From Jan. 2025 till now
Employer	: Generators & Workshop Maintenance AMHEC, Saudi Arabia
Job title	: Workshop Service Engineer Team Lead
Job Description	: • Equipment Maintenance & Repair: Performed advanced repair and troubleshooting of diesel generator sets in compliance with ARAMCO and AMHEC standards, ensuring high reliability and operational safety. • Engine Diagnostics: Diagnosed and repaired engines including Perkins, Cummins, and JCB, identifying mechanical and electrical root causes affecting performance. • Alternator Systems Expertise: Maintained and repaired Stamford and Mecc Alte alternators, including fault diagnosis related to bearings, insulation, windings, and excitation systems. • Failure Analysis: Analyzed alternator bearing failures, fuel injection pump issues, and injector malfunctions, minimizing downtime and preventing repeat failures. • Humidity & Environmental Protection: Implemented corrective actions to reduce the impact of FOG and high humidity on alternator insulation and electrical components. • Team Leadership: Led and supervised technician teams to reduce repair turnaround time, improve workflow efficiency, and ensure compliance with quality standards.

- **Quality Inspection & Compliance:** Conducted post-repair inspections and functional testing to verify full compliance with AMHEC technical and safety requirements.
- **Tower Light Maintenance:** Repaired and maintained single-phase generator tower lights without AVR, ensuring stable and safe operation.
- **Equipment Modification:** Executed mechanical and electrical modifications based on customer-specific requirements to enhance reliability and operational performance.
- **DC Generator Repair:** Repaired Miller welding machine DC generators, including troubleshooting excitation and output stability issues.
- **Failure Prevention:** Identified early failure points in alternator components and applied preventive maintenance strategies to avoid catastrophic breakdowns.
- **AVR Programming & Configuration:** Utilized Mecc Alte AVR programming tools to enhance voltage regulation, protection settings, and system stability.
- **Control Systems Handling:** Worked with multiple AVR types, generator controllers, and conventional control systems for monitoring and operational control.
- **PLC Troubleshooting:** Supported diagnostics and fault detection in PLC-based systems, identifying defective components and control logic issues.
- **Rewinding & Electrical Repair:** Demonstrated strong knowledge in alternator rewinding processes, insulation testing, and failure detection techniques.
- **Brushless Alternator Systems:** Handled SE brushless capacitor-operated AC alternators, ensuring correct excitation and output performance.
- **Winding Cleaning Techniques:** Applied hot and cold cleaning methods for stator and rotor windings to improve insulation integrity and lifespan.
- **Heavy Equipment Electrical Support:** Provided electrical troubleshooting support to earthmoving equipment, resolving system and control-related failures.

Dates : From Mar. 2024 till Jan. 2025

Employer : PICO, Egypt

Job title : Senior Electrical Power Generation Engineer

Job Description :

- **Power Generation Operations:** Operated and maintained diesel power generation systems supporting offshore oil & gas operations at Gemsa Site, ensuring continuous and safe power availability.
- **Cummins Engine Expertise:** Performed advanced operation, troubleshooting, and maintenance of Cummins KTA38 engines, ensuring high reliability and optimal load performance.
- **Preventive Maintenance:** Executed scheduled preventive maintenance programs to minimize downtime, extend equipment lifespan, and ensure compliance with operational standards.
- **Corrective Maintenance:** Diagnosed and resolved mechanical and electrical faults through structured corrective maintenance procedures under offshore conditions.
- **Synchronization Systems:** Managed and configured DSE 8610 synchronizing controllers, ensuring accurate load sharing, synchronization stability, and system protection.

- AVR Systems Management: Operated and troubleshot Stamford MX321 and MX322 Automatic Voltage Regulators (AVR) to maintain voltage stability and system efficiency.
- Voltage Regulation: Performed voltage regulation adjustments and monitoring to ensure safe parallel operation and optimal electrical performance.
- System Troubleshooting: Conducted advanced diagnostics for power generation control systems, alternators, excitation circuits, and protection devices.
- Reliability Engineering: Enhanced system reliability through continuous performance monitoring and root-cause analysis of operational failures.
- Electrical Modifications: Designed, modified, and implemented electrical system upgrades and modifications to meet operational and site-specific requirements.
- System Installation: Participated in the installation and commissioning of new electrical and power generation systems, ensuring compliance with engineering standards.
- Operational Coordination: Coordinated synchronization, load management, and voltage control activities to support stable offshore operations.
- Safety & Compliance: Followed oil & gas safety procedures and operational standards to maintain a safe working environment.
- Technical Documentation: Prepared and updated maintenance reports, operational logs, and technical documentation related to generators and control systems.

Dates	:	From Jul. 2021 till Mar. 2024
Employer	:	Mantrac Egypt
Job title	:	Electrical Field Service Engineer (Power Generation & Heavy Equipment)
Job Description	:	• Field Service Support: Delivered onsite electrical troubleshooting, repair, and commissioning for CAT, Olympian, and Perkins power generation systems and heavy equipment across multiple industries. • DC Electrical Systems: Diagnosed and repaired 12V/24V DC systems, including battery health checks, charging circuits, starters, alternators, and grounding integrity. • Datalink Communication: Troubleshot and restored communication networks and datalinks (CAN, CAT Data Link, RS485), including harness repairs, connector remediation, and component replacements. • ECM Programming & Setup: Utilized CAT Electronic Technician (CAT ET) and CAT diagnostic tools to configure, replace, and calibrate ECMs (Engine Control Modules) and related parameters. • Sensor & Solenoid Diagnostics: Diagnosed sensors and solenoids based on operational behavior and control logic; implemented temporary corrective solutions to maintain uptime until parts availability. • Insulation & Resistance Testing: Performed winding insulation resistance (IR) and resistance testing, including calculations and comparisons against manufacturer specifications. • LV Power Systems: Diagnosed and repaired 400V three-phase low voltage systems, including fault isolation, load behavior evaluation, and restoration of electrical stability. • Protection Settings: Configured protection thresholds for over/under

voltage and over/under frequency based on site operating conditions and load profiles.

- AVR Configuration: Set up and tuned Automatic Voltage Regulators (AVR) using wiring diagrams and manufacturer procedures to stabilize output and improve voltage regulation.
- Load Management Systems: Configured and validated load share, load sensing, and speed control modules, ensuring stable parallel operation and accurate load distribution.
- Switchgear & ATS Controls: Installed, tested, and troubleshot switchgears, ATS controllers, and circuit breakers, ensuring safe transfer operations and protection compliance.
- Control Panel Modification: Implemented and modified electrical control panels based on site needs, technical availability, and operational constraints.
- Control Circuit Design: Designed cost-effective and durable control circuits, improving maintainability and component reliability under harsh operating environments.
- Schematics Interpretation: Interpreted CAT schematics, wiring diagrams, and panel drawings to perform structured fault finding and implement correct repairs.
- Preventive Maintenance: Executed preventive maintenance in accordance with OEM O&M manuals, improving availability and reducing unplanned downtime.
- Load Performance Analysis: Studied the impact of varying load types on engine and generator behavior to support troubleshooting and performance optimization.
- Oil & Gas / Marine Exposure: Supported power generation systems within oil & gas, marine generators, and industrial engine environments with strict uptime requirements.
- Heavy Equipment Electrical Support: Provided electrical and diagnostic support for CAT heavy equipment, including integration with hydraulic systems, power train interfaces, and engine controls.
- Engine Overhaul & Failure Analysis: Participated in engine overhauls and conducted failure analysis, identifying root causes.
- Hydraulic systems Troubleshooting and repair with a good knowledge for basics and service methods.
- PowerTrain systems troubleshooting and repair drive a good troubleshooting ability to service and return to operational conditions with small amount of time.

- Field of experience :**
- CMRP Certified / Electrical Power Generation Engineer / Electrical Field Service Engineer – Power Systems / Power Generation & Heavy Equipment Service Engineer / Electrical Service Engineer.
 - Key Achievements (2025):
 - Delivered SAR 220K direct cost savings through reliability-driven maintenance, inventory control, and supply chain optimization.
 - Increased team wrench time to ~50% and improved MTBF from 2 to 6 months, significantly reducing unplanned breakdowns and repeat failures.
 - Reduced transportation costs by ~66%, achieving an average saving of SAR 336K by minimizing asset movement to remote sites

(250– 1050 km).

- Lowered spare parts expenditure by SAR 105K for generators and reduced Tower Light fleet costs from SAR 563K to SAR 447K (413 units) while improving quality and supplier effectiveness.
- Conducted RCA and permanent corrective actions, reducing breakdown rate from 19.3% to 5.5%, meeting management targets.
- Supported customer audits and technical meetings, delivering sustainable power solutions through automated diesel fueling, scheduled start-on-load, and synchronized generator operations.
- Competencies:
 - Power Generation Operations.
 - Electrical Field Service Engineering.
 - Generator O&M (Diesel/Gas).
 - Preventive Maintenance.
 - Corrective Maintenance (CM).
 - Troubleshooting & Diagnostics.
 - Root Cause Analysis (RCA).
 - Reliability Improvement.
 - Generator Synchronization.
 - Load Sharing & Load Sensing.
 - Voltage Regulation & AVR Setup.
 - ECM Configuration.
 - CAN / CAT / RS485 Datalinks.
 - Synchronizing Systems.
 - CAT ET Diagnostics & Programming.
 - DC Systems (12V/24V).
 - Alternator Repair & Testing.
 - Winding Insulation (IR) Testing.
 - Resistance Testing & Calculations.
 - Control Circuit Design.
 - Switchgear & ATS Systems.
 - Circuit Breakers & Protection Relays.
 - Control Panel Modification.
 - Marine Power Systems.