

Professional Engineering Services

Gas Engines & Power Generation Training

Course Duration: 5 days

Course Contents:

Chapter 1: Internal Combustion Engine “ICE” Basic Design

- Brief History of ICE & Types & Cycles
- Guascor Engine Layout and Configuration
- Guascor Gas Engine Main Systems
- Gas Engine Vs Diesel Engine
- Ratings definitions

Chapter 2: AC Alternators Basics

- Principle of operation
- Major components (field coils, commutator, DC output, regulator, armature, rotating diodes)
- Generator Design & Performance characteristics
- Insulation system
- Thermal Deterioration
- Design consideration
- Gen Sets Faults & Protection Standards, IEC & NEC & NEMA Standards

Chapter 3: Synchronization Introduction

- Paralleling & Synchronization Condition
- Synchronization Types
- Governor Types
- Synchronization Application

Chapter 4: Gen Sets Installation

- Foundation
- Vibration
- Noise
- Ventilation

Chapter 5: Gas Engine Main Systems

- Model View Illustration
- Specifications
- Gas Basics & Characteristics
- Engine Design
- Fuel System Operation

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- Air Intake & Exhaust System Operation
- Lubrication System Operation
- Cooling System Operation
- Air starting System Operation
- Safety Signs & labels
- Protection Devices

Chapter 6: Preventive Maintenance Program

- Maintenance Schedule
- When Required
- Walk around inspection
- Oil Change and filter replacements
- Data Recording & Monitoring

Chapter 7: Gas Engines Troubleshooting

Chapter 8: Lube Oil Functions & characteristics

- Lube Oil Function, Properties & Types
- Oil Contaminants & Degraders
- Oil Change, Sampling & Analysis
- Grease Functions, Properties & Application
- Oil Analysis Interpretation
- Equipment Troubleshooting
- Examples of Oil Related Failures
- Water elements factors

Chapter 9: Special Devices

- Detcon 20
- Electronic Gas measuring system “ EGS”

Chapter 10: Gas treatment unit

- Gas Quality
- Function & Purpose
- Main components
- Operation & settings
- Maintenance