

€ TRAINING

Operations and Maintenance of Pressure
Reduction System/Station (PRS)





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Introduction

The availability and reliability of power generating equipment is central to your plant's efficient operation. To ensure optimum operation and maintenance, you need a dedicated team of trained staff. Clarke Energy offers specialized customer-orientated training programmers for beginners and experienced service technicians alike. Customers, service providers and other stakeholders can participate in our comprehensive training program in an INNIO-approved Jenbacher training center, or directly on-site at a customer's plant. The focus of our training programmers - developed by Jenbacher's Global Training Centre for gas engines - is in-depth product knowledge, applications knowledge sharing and safety training. Our courses apply everything learned in both theoretical and practical sessions at the engine site to make sure your staff are well prepared to meet the challenges of everyday operation.

Course Objectives

- Easier and more efficient operation of your equipment
- Greater safety for you as an operator
- Technical expertise for the operation and maintenance
- Knowledge-sharing of the gas engine technology
- Practical training modules, working directly on the engines
- Customized training modules to meet your individual requirements and specific engine configurations
- Multiple languages including English, German, Italian and Spanish interpreters for other languages available on request

Target Audience

This course is designed for:

- Mechanical engineers and mechanical supervisors
- Inspection engineers and inspectors
- Mechanical technicians
- Field Operators and Technicians
- Facilities and process engineers
- Maintenance & planning managers
- Planning & integrity engineers
- Electrical engineers
- Anyone involved in steam generation and water treatment Process Engineers who are new to the profession

Course Objectives

Unit 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

Unit 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

Unit 3: Synchronization Introduction

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

Unit 4: Gen Sets Installation

- Foundation
- Vibration
- Noise
- Ventilation

Unit 5: Gas Engine Main Systems

- Model View Illustration
- Specifications
- Gas Basics & Characteristics
- Engine Design
- Fuel System Operation
- Air Intake & Exhaust System Operation
- Lubrication System Operation
- Cooling System Operation
- Air starting System Operation
- Safety Signs & labels
- Protection Devices

Unit 6: Preventive Maintenance Program

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

Unit 7: 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

Unit 8: Special Devices

- Detcon 20
- Electronic Gas measuring system “ EGS”

Unit 9: Gas treatment unit

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