

# Gas Turbine Operation and Troubleshooting

10 – 14 May 2027  
Düsseldorf (Germany)

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## Gas Turbine Operation and Troubleshooting

**Ref:** 3256016\_358919 **Date:** 10 – 14 May 2027 **Location:** Düsseldorf (Germany) **Fees:** 5900 GBP

### Introduction

This course provides **Senior Field Operators - Utilities & Offsite** with practical knowledge of gas turbine operation, startup, shutdown, monitoring, troubleshooting, alarms, trips, and abnormal conditions. The program emphasizes field application, practical problem-solving, and operator decision-making rather than advanced theory.

### Course Objectives

By the end of this course, participants will be able to:

- Understand gas turbine components, systems, and operating principles.
- Perform safe startup, normal operation, and shutdown procedures.
- Monitor critical operating parameters and identify abnormal conditions.
- Understand alarms, trips, interlocks, and protective systems.
- Troubleshoot common turbine, combustion, fuel, lubrication, and compressor problems.
- Improve field inspection, decision-making, and control-room coordination.
- Apply practices that improve equipment reliability, safety, and performance.

### Course Outlines

#### Day 1: Gas Turbine Fundamentals

- Gas turbine operating principles and applications
- Major components and auxiliary systems
- Compressor, combustion, turbine, and exhaust systems
- Fuel, lubrication, cooling, and starting systems
- Critical operating parameters
- Practical equipment walkdown

#### Day 2: Startup, Operation & Shutdown

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A graphic of a chessboard with several chess pieces (a king, a queen, a rook, and a pawn) positioned on it. The board is white and black, and the pieces are gold and silver. The graphic is located in the bottom right corner of the page.

- Pre-startup checks and permissives
- Startup and acceleration sequence
- Loading and normal operation
- Monitoring temperature, pressure, speed, and vibration
- Normal and emergency shutdown
- Startup/shutdown practical scenarios

### **Day 3: Monitoring, Alarms & Abnormal Conditions**

- Operating trends and field indications
- Alarms, trips, interlocks, and protection systems
- High temperature and temperature spread
- High vibration and bearing problems
- Flame failure and fuel gas problems
- Compressor surge and fouling
- Practical alarm and trip case studies

### **Day 4: Troubleshooting & Fault Diagnosis**

- Systematic troubleshooting methodology
- High temperature and vibration
- Low power and compressor performance
- Fuel and combustion problems
- Lubrication and starting system problems
- Field checks and operator response
- Practical troubleshooting exercises

### **Day 5: Emergency Scenarios & Practical Assessment**

- Gas turbine trips and emergency response
- Overspeed, vibration, flame failure, and fuel loss
- Lube oil and instrument air failures
- Restart after a trip
- Integrated operating scenario
- Practical assessment, review, and Q&A

### **Why Attend This Course: Wins & Losses!**

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- **Improve Troubleshooting Skills:** Identify and resolve common gas turbine problems faster.
- **Increase Operator Confidence:** Strengthen field operating and decision-making skills.
- **Improve Safety:** Respond effectively to alarms, trips, and emergency conditions.
- **Enhance Reliability:** Reduce equipment damage, downtime, and unnecessary trips.
- **Practical Learning:** Apply knowledge through realistic scenarios and troubleshooting exercises.

## Conclusion

This five-day course equips Senior Field Operators with the practical skills required to **operate, monitor, and troubleshoot gas turbines safely and effectively**. The strong focus on field application, abnormal conditions, and practical scenarios helps improve operator confidence, equipment reliability, and overall Utilities & Offsite performance.

## Frequently Asked Questions FAQ

### Who should attend?

Senior Field Operators, Utilities & Offsite Operators, and Operations Supervisors.

### Is the course practical?

Yes. The course emphasizes practical operation, troubleshooting, scenarios, and case studies.

### Does it cover startup and shutdown?

Yes, including normal and emergency procedures.

### Does it cover alarms and trips?

Yes, including interlocks, protective systems, and operator response.

### Can it be customized?

Yes. The course can be adapted to the specific gas turbine manufacturer, model, control system, and site requirements.

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A graphic illustration of a chessboard with several chess pieces. A large gold king piece is in the foreground on the right, with a silver pawn and a silver knight behind it. In the background, there are concentric circles emanating from the center of the board.