JUPITER PRIME

Consulting • Training • Advisory

جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

Centrifugal Compressor and Steam Turbine Operating Checks Training Course

8 – 12 February 2027
Dar es Salaam

Centrifugal Compressor and Steam Turbine Operating Checks Training Course

Ref: 1406_52578 **Date:** 8 – 12 February 2027 **Location:** Dar es Salaam **Fees:** 7900 GBP

Centrifugal Compressor and Steam Turbine Operating Checks is a 1-week training course for rotating equipment technicians on turbine-driven compressor trains, producing a Shift Round Check Sheet for their own machines. Compressor trains drive gas processing, refrigeration and power plants, so an unnoticed seal leak or bearing temperature rise can halt a whole site. Jupiter Prime Training delivers Centrifugal Compressor and Steam Turbine Operating Checks.

Why Centrifugal Compressor and Steam Turbine Operating Checks Matter Now

Three forces shape this subject. Many turbine-driven trains now carry online vibration and temperature monitoring, yet the technician on the round remains the first to hear, smell and feel a change. Experienced machinists are leaving, and newer technicians need a structured way to read seal, bearing and governor behaviour. Owners expect longer runs between overhauls. A site whose technicians catch surge, oil contamination or governor hunting early avoids trips and costly damage; one that misses them loses production. The course uses maintenance vocabulary from EN 13306 Maintenance Terminology and the asset view of ISO 55001 Asset Management.

Who Gains Most from Centrifugal Compressor and Steam Turbine Operating Checks

- Technicians responsible for routine rounds on compressor and turbine trains
- Technicians who handle lube oil, seal oil and dry gas seal support systems
- Technicians who assist with start-up, warm-up and shutdown sequences
- Technicians recording vibration and temperature readings
- Technicians who carry out first-line fault finding before calling specialists

A shift crew from one unit gains most when several members attend, agreeing common reading limits for the same train.

Centrifugal Compressor and Steam Turbine Operating Checks Capabilities

Participants turn gauge readings, sounds and trends into clear calls on whether a train can keep running.

- Identify the function of impellers, diaphragms, nozzles, blades and casings — fault tracing
- Check bearing, seal and lube oil conditions against normal ranges — shift supervisors deciding on continued running
- Recognise surge, choke and anti-surge valve behaviour — control room operators adjusting load
- Test overspeed trip and governor response during scheduled checks — reliability engineers

- Apply a symptom-to-cause fault chart to common running problems — maintenance planners raising work orders
- Record and hand over readings clearly — the next shift and machinery engineers

Key Centrifugal Compressor and Steam Turbine Operating Checks Terms

- Surge — flow reversal in a centrifugal compressor when flow falls below a minimum, causing noise and vibration.
- Anti-surge valve — a recycle valve that opens to keep compressor flow above the surge line.
- Dry gas seal — a non-contact shaft seal using a thin gas film between rotating and stationary faces.
- Tilting-pad journal bearing — a bearing whose pivoting pads form oil wedges that support the rotor.
- Governor — the control device that adjusts steam admission to hold turbine speed or load.
- Overspeed trip — a protective device that shuts the steam supply when the turbine exceeds a set speed.

Centrifugal Compressor and Steam Turbine Operating Checks Day by Day

Day 1: Inside the Compressor Train

- Impellers, Diaphragms and Casings — Reading Compressor Flow Paths
- Steam Turbine Nozzles, Blades and Stages — Energy Conversion Basics
- Couplings and Gearboxes Between Driver and Compressor — Alignment Effects
- Performance Curves and Operating Points — Where the Machine Should Run
- Train Layouts in Gas Plants and Refineries — Duty Differences

Day 2: Seals, Bearings and Oil Systems

- Dry Gas Seal Panels and Primary Vent Readings — Seal Health
- Labyrinth and Oil Film Seals — Recognising Leakage Signs
- Tilting-Pad and Thrust Bearings — Temperature and Axial Position Limits
- Lube and Seal Oil Consoles — Filters, Coolers and Accumulators
- Oil Sampling and Contamination Checks — When to Change Oil

Day 3: Governors, Trips and Surge Control

- Governor Types and Speed Control Loops — Hunting and Droop Symptoms
- Trip and Throttle Valve Exercising — Confirming Protective Action
- Overspeed Trip Testing — Safe Sequence and Acceptance
- Anti-Surge Control Lines — Recycle Valve Response Under Load Change
- Steam Quality and Condensate Drains — Water Induction Prevention

Day 4: Reading Symptoms and Finding Faults

- Vibration Trend Basics — Imbalance, Misalignment and Rub Signatures
- Temperature and Pressure Deviations — Linking Readings to Causes
- Symptom-to-Cause Fault Chart — First-Line Diagnosis Steps
- Start-Up and Slow-Roll Checks — Warm-Up and Critical Speed Passage
- Petrochemical and Power Plant Trip Cases — Lessons for Rounds

Day 5: Practising the Shift Round Check Sheet

- Seal and Bearing Reading Limits — Setting Normal and Alarm Bands
- Governor and Trip Check Entries — Recording Test Results
- Fault Scenario Walk-Through — Applying the Diagnosis Chart
- Shift Handover Format — Clear Escalation to Engineers
- Completing the Shift Round Check Sheet — Train-Specific Entries and Limits

Applying Centrifugal Compressor and Steam Turbine Operating Checks After the Course

- Walk the compressor train with the new check sheet and mark readings lacking alarm bands.
- Brief the shift on a recent seal or bearing alarm using the symptom-to-cause chart.

Centrifugal Compressor and Steam Turbine Operating Checks Questions FAQ

What are centrifugal compressor and steam turbine operating checks, and why do they matter now?

They are the routine readings and tests technicians take on running compressor trains. They matter now because experienced machinists are retiring, and early detection at the machine prevents trips.

Which roles gain most from centrifugal compressor and steam turbine operating checks?

Rotating equipment technicians on rounds, oil systems and start-ups gain most. You are the first person near the machine, so your readings decide whether a fault is caught early.

How do centrifugal compressor and steam turbine operating checks differ from a machinery overhaul course?

The focus is running checks and first-line diagnosis, not dismantling. An overhaul course covers clearances, rebuild and rotor work in a shop; here you read live machines and decide when to escalate.

What do you bring back from centrifugal compressor and steam turbine operating checks?

You bring back a check sheet tailored to your train, with reading limits and handover wording. You also bring a fault chart for seals, bearings, governors and surge.

Centrifugal Compressor and Steam Turbine Operating Checks: The Way Forward

The Shift Round Check Sheet gives technicians one set of limits for seals, bearings, governors and surge control. Its first use is deciding whether a rising reading needs an engineer now or a closer watch. Shift crews and machinery engineers both use it. After a few weeks, revisit whether its alarm bands match how the train actually behaves.