



POWER AND ELECTRICAL TRAINING

Power Plant Operations and Control

5 day course

Classroom, online or in-house

Course overview

This course covers the operation and control of a generating plant across its full range of states, not just steady load. Delegates work through the thermal cycle and plant systems, start up and shutdown sequences, load following and frequency response, the control systems governing boiler, turbine and generator, and the protections that trip a unit. Substantial attention goes to abnormal operation: how a unit behaves during a disturbance, what the operator sees, and the decisions that determine whether an event becomes a trip. The course closes on performance monitoring, heat rate and the operating decisions that move plant efficiency.

What you will learn

- Describe the thermal cycle and the main plant systems
- Carry out start up and shutdown sequences in the correct order
- Explain load following, frequency response and grid code obligations
- Describe boiler, turbine and generator control and their interaction
- Identify unit protections and the conditions that trip a plant
- Recognise abnormal operation early and respond appropriately
- Monitor heat rate and identify the operating decisions that affect it

Who should attend

- Power plant operators, shift charge engineers and supervisors
- Plant and performance engineers
- Control and instrumentation staff in generation
- Maintenance engineers in power plant
- Graduate engineers entering generation

Course outline

- 01 The thermal cycle and main plant systems
- 02 Start up sequences and the constraints on each step
- 03 Shutdown, cooling and preservation
- 04 Load following, frequency response and grid code obligations
- 05 Boiler, turbine and generator control and their interaction
- 06 Unit protections and trip conditions
- 07 Abnormal operation, disturbance response and operator decisions
- 08 Heat rate, performance monitoring and efficiency

Upcoming dates

Dates	Venue	Format	Fee per delegate
26 to 30 October 2026	Cape Town, South Africa	Classroom	R19,950
2 to 6 November 2026	Lagos, Nigeria	Classroom	USD 1,325
9 to 13 November 2026	Windhoek, Namibia	Classroom	R19,950
28 December 2026 to 1 January 2027	Online	Online	R8,500



Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 1,325** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afri-science.co.za, or WhatsApp us on **+27 63 479 1136**.

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