



POWER AND ELECTRICAL TRAINING

Hydropower Plant Operation and Maintenance

5 day course

Classroom, online or in-house

Course overview

Hydropower supplies a large share of electricity across the region and is increasingly operated against hydrological conditions its designers did not anticipate, which changes both dispatch and machine wear. This course covers running it. Delegates work through hydrology, head and flow and their relationship to output, turbine types and the selection and operating range of each, and the waterway from intake through penstock to draft tube. Generator, excitation and governor systems are covered. Cavitation, silt erosion and the damage mechanisms specific to the machines follow. Dam and civil structure monitoring is addressed at an operating level. The course closes on dispatch and reservoir management under drought, and on the safety of water conveyance systems.

What you will learn

- Relate head, flow and hydrology to plant output
- Compare turbine types and their operating ranges
- Operate the waterway from intake through penstock to draft tube
- Maintain generator, excitation and governor systems
- Identify cavitation, silt erosion and machine specific damage
- Monitor dam and civil structures at an operating level
- Manage dispatch and reservoir levels under drought conditions

Who should attend

- Hydropower plant operators and supervisors
- Mechanical and electrical maintenance staff
- Utility generation engineers
- Dam safety and civil monitoring personnel
- Graduate engineers entering hydro generation

Course outline

- 01 Operated against conditions the designers did not expect
- 02 Hydrology, head and flow
- 03 Turbine types and operating ranges
- 04 Intake, penstock and draft tube
- 05 Generator, excitation and governor systems
- 06 Cavitation and silt erosion
- 07 Dam and civil structure monitoring
- 08 Dispatch, reservoir management and waterway safety

Upcoming dates

Dates	Venue	Format	Fee per delegate
26 to 30 October 2026	Online	Online	R8,500
16 to 20 November 2026	Durban, South Africa	Classroom	R19,950
14 to 18 December 2026	Maputo, Mozambique	Classroom	USD 1,325
11 to 15 January 2027	Harare, Zimbabwe	Classroom	USD 1,325



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@afriscience.co.za, or WhatsApp us on **+27 63 479 1136**.

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