

Hydro Power Development

Course Contents

Sl. No.	Particulars	Contact Hours
1.	INTRODUCTION: Type of Hydro-electric development, classification, Techno Economic studies for capacity size & type.	2
2.	Hydraulic Turbines and Governor: Types; selection criteria, Model testing, specifications. Speed rise and Pressure Rise, studies for performance requirements.	6
3.	Hydro Generator and Excitation System: Types; selection; Characteristics; Specification; Testing	4
4.	Power Transformer: Types; Characteristics; Specification and Testing	3
5.	HV Circuit Breaker: Types; Characteristics; Specification and Testing	4
6.	Power evacuation arrangements; main single line diagram; interconnected with grid	6
7.	Control & Protection: Protective Relaying and Metering of Hydro Generators; Turbines, Transformers, Bus Bars and Outgoing Feeders, control and Monitoring System for Turbines, Generators, Exciters; transformers; Breakers, Power Plant Start/Stop, running control and Annunciation	4
8.	Electrical Auxiliaries: Auxiliaries Power; DC System; Power & Control Cables and Cabling; Lighting System; Grounding System	4
9.	Mechanical Auxiliaries: EOT Crane; Cooling Water System; Dewatering and Drainage System; HP & LP compressed Air System; Fire Protection; Ventilation and Air conditioning	3
10.	Switchyard Equipment: Isolators, Potential Transformers, Current Transformer; Lighting Arrestors; Switchyard and Structures	2
11.	Erection, Commissioning and Field Testing Renovation and modernization	4