



# Generation Curriculum

## Combined Cycle Technologies

### Gas Turbine Power Generation

- 2501 Major Components Design and Construction
- 2502 Gas Turbine Support Systems
- 2503 Operation of Gas Turbines
- 2504 Control & Protection Systems
- 2505 Aero-Derivative Gas Turbines
- 2506 Routine Maintenance
- 2507 Major Maintenance
- 2508 Combined Cycle Operations
- 2509 Heat Recovery Steam Generator (HRSG)
- 2510 Generator and Electrical Systems
- 2511 Gas Turbine Power Generation Review Test

### Steam Power and Co-Generation

- 7401 Co-Generation & Other Turbine Cycles
- 7402 Steam Production
- 7403 Fuels & Combustion
- 7404 Boiler Operation
- 7405 Boiler Control  
(Operation, Environmental, Chemical)
- 7406 Steam Turbine Construction
- 7407 Steam Turbine Operation & Control
- 7408 Power Generation
- 7409 Plant Auxiliary Systems
- 7410 Power Plant Maintenance
- 7411 Combined Heat and Power Systems

### Heat Rate Optimization

- 7801 Fundamentals of Plant Efficiency I
- 7802 Fundamentals of Plant Efficiency II
- 7803 Factors Affecting Boiler Efficiency
- 7804 Operator Controllable Losses: Boiler
- 7805 Factors Affecting Turbine Efficiency
- 7806 Operator Controllable Losses:  
Turbine Cycle
- 7807 Balance of Plant Operation
- 7808 Power Plant Control

### Combined Cycle Power Generation

- 7901 Introduction to Combined Cycle  
Power Plants
- 7902 Combined Cycle Operating Procedures

## Condition Monitoring

- 7701 Maintenance Management
- 7702 On-Line Condition Monitoring
- 7703 Vibration Monitoring & Analysis
- 7704 Non-Destructive Examination Techniques
- 7705 Electrical Testing
- 7706 Liquid Analysis
- 7707 Applications of Condition Monitoring

## Diesel Power Plant Operation

- 4601 Diesel Engines for Power Generation
- 4602 Diesel Engine Support Systems
- 4603 Power Generation
- 4604 Diesel Plant Operation
- 4605 Diesel Plant Maintenance
- 4606 Stand-By Diesel Generator Maintenance

## Electrical Troubleshooting Skills

- 7301 Troubleshooting - Basic Techniques
- 7302 Troubleshooting - Basic Control Circuits
- 7303 Troubleshooting - Motor Control Circuits
- 7304 Troubleshooting - Industrial Control

## Electric Utility Management

- 7601 The Electricity Business
- 7602 Management Organization
- 7603 Customer Service
- 7604 Electric Utility Accounting
- 7605 Electric Utility Rates & Rate Setting
- 7606 Electric Utility Financing
- 7607 Deregulation and Competition
- 7608 Deregulation in Practice

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## Hydro-Electric Power Plant Operations

- 2701 The Hydro-Electric Role in the Power System
- 2702 Hydro Power Stations
- 2703 Water Management
- 2704 Hydro Turbines
- 2705 Turbine Monitoring and Control
- 2706 The Hydro-Generator
- 2707 Generator Monitoring and Control
- 2708 Hydro Plant Auxiliaries
- 2709 Operating Electrical Equipment
- 2710 Hydro Plant Operation & Maintenance
- 2711 Hydro-Electric Power Plant Operations Review Test

## Power Plant Control Room Operator Training

- 901 Plant Control System
- 902 Circulating Water System
- 903 Condensate System
- 904 Feedwater System
- 905 Boiler Feed Pumps
- 906 Boiler Water and Steam System
- 907 Combustion Air and Flue Gas System
- 908 Boiler Fuel System
- 909 Air Pollution Control Systems
- 910 Turbine Auxiliaries System  
Operation & Control
- 911 Generator & Auxiliaries System  
Operation & Control
- 912 Unit Integrated Startup & Shutdown
- 913 Efficient, Reliable & Environmentally  
Sensitive Operations
- 914 Abnormal Plant Conditions
- 915 Heat Rate Improvement

## Power Plant Emission Management

- 2401 Power Plant Emissions
- 2402 Flue Gas Desulfurization Systems - FGD
- 2403 Nox Reduction Systems
- 2404 Treatment of Liquid Effluents
- 2405 Particulate Removal and Solid Waste
- 2406 Handling Hazardous Materials
- 2407 Burning Waste