Power Plant Operations & Optimization

Enhancing Efficiency, Reliability, and Sustainability in Modern Power Plants

MEERIM VISIONARY TRAINING (FZE)
INSPIRING AMBITION AND SUCCESS

Training Program

17-21 NOV 2025 IN DOHA, QATAR

21-25 DEC 2025 IN DUBAI, UAE

Why Invest in This Training?

The Challenge:

In today's energy sector, power plants face increasing fuel costs, tightening environmental regulations, and the urgent need for efficiency improvements. Traditional operational practices are no longer enough—companies must optimize their plants to stay competitive, reliable, and sustainable.

Return on Investment (ROI):

Investing in this training is not just a cost—it's a long-term performance gain. Even a 1–2% improvement in plant efficiency translates into millions in annual savings for large-scale power plants.

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TECHNICAL PROPOSAL

POWER PLANT OPERATIONS & OPTIMIZATION

Training Audience:

- Power Plant Engineers and Operators
- Energy Managers & Performance Analysts
- Maintenance Engineers & Reliability Specialists
- Plant Supervisors and Senior Technicians
- Professionals from Oil & Gas, Petrochemicals, Steel, Cement, and Heavy Industries relying on captive/embedded power plants

Training Overview:

This intensive 5-day program provides participants with a deep understanding of modern power plant operations and optimization strategies. It covers plant systems, efficiency improvement techniques, performance monitoring, troubleshooting, and practical methods for reducing operating costs while improving reliability and sustainability.

Participants will gain insights into best practices, energy efficiency tools, digital optimization, and asset management strategies that can transform operational excellence in power generation facilities.

Training Objectives:

- Understand the fundamentals of power plant operations and systems.
- Identify key performance indicators (KPIs) for plant efficiency and reliability.
- Apply optimization strategies to maximize plant output and reduce costs.
- Utilize modern digital tools and predictive analytics for plant performance.
- Implement sustainable practices to minimize environmental impacts.
- Troubleshoot common operational challenges in thermal and renewable-based power plants.

Organizational Benefits:

- Achieve higher plant efficiency and reduced operating costs.
- Increase reliability and asset life of critical equipment.
- Improve compliance with environmental and regulatory standards.
- Build in-house expertise for long-term operational excellence.

Training Methodology:

- Interactive lectures with case studies
- Real-world plant performance examples
- Group discussions and problem-solving activities
- Hands-on exercises with sample datasets
- Pre- and post-training assessment
- Completion of Certificates

Personal Benefits:

- Gain practical expertise in operating and optimizing power plants.
- Improve problem-solving and decision-making skills.
- Stay updated with the latest digital and sustainable practices.
- Enhance professional credibility and career growth.

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Training Modules:

Day 1 – Fundamentals of Power Plant Operations

- Overview of power generation technologies (thermal, gas, combined cycle, renewables)
- Plant layout and major components
- Thermodynamic cycles (Rankine, Brayton, Combined Cycle)
- Role of operators in plant performance
- Safety and regulatory compliance

Day 2 – Plant Systems and Operational Challenges

- Boiler/HRSG operations and efficiency
- Gas turbine operation and monitoring
- Steam turbine performance and control
- Balance of plant (BOP) systems – cooling towers, pumps, compressors
- Fuel handling, combustion, and emissions control

Day 3 – Performance Monitoring & Optimization Techniques

- Key performance indicators (heat rate, capacity factor, efficiency)
- Condition monitoring and predictive maintenance
- Energy auditing methods for power plants
- Real-time monitoring and control strategies
- Case studies: Successful optimization practices

Day 4 – Digitalization & Advanced Optimization Strategies

- Role of SCADA, DCS, and advanced process control
- Predictive analytics, AI, and machine learning in power plants
- Asset reliability and risk-based maintenance strategies
- Integration of renewable energy sources with thermal power plants
- Economic optimization – cost reduction and revenue maximization

Day 5 – Sustainability & Troubleshooting Best Practices

- Environmental considerations and emission reduction strategies
- Carbon capture and storage (CCS) overview
- Troubleshooting common operational issues
- Future trends in power plant operations
- Group exercise: Developing an optimization roadmap for your plant

TALK TO US

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