

Power Plant Training

AVAILABLE PROGRAMMES

Power Plant Generation Learning Plan

Tier 1 – Fundamentals

<ul style="list-style-type: none"> • Industrial Math: Basic Operations 1 • Industrial Math: Basic Operations 2 • Math: Basics • Industrial Math: Algebra • Industrial Math: Formulas, Graphs & Trends • Hand Tools, Part 1 • Hand Tools, Part 2 • Introduction to Power Tools • Precision Measurement Tools 1 • Precision Measurement Tools 2 • Safety Orientation • Back Safety • Fall Protection • Hearing Conservation • Bloodborne Pathogens • Personal Protective Equipment • Fire Safety • Classes of Fires and Extinguisher • Warning Signs and Labels • Respiratory Protection • Material Safety Data Sheets • Safety: Chemical Health Hazards • Electrical Safety • Diagrams: Blueprints • Operator Responsibilities: <p><i>Introduction</i></p> <ul style="list-style-type: none"> • Operation - Basic Principles • Operator Responsibilities: <ul style="list-style-type: none"> ▪ Advanced Operator Responsibilities 	<ul style="list-style-type: none"> • Bearing Basics • Equipment Lubrication: Lubricants & Bearings • Hydraulics: Routine Maintenance • Pumps: Basic Types and Operation • Efficient Pump Operation • Valves: Electric and Hydraulic Actuators • Welding: Oxy-Fuel Gas Welding • Welding: Arc Welding • Refrigeration System: Operation • Plant Science: Heat • Plant Science: Heat Transfer • Heat Exchangers: Introduction • SCRs and TRIACs • Quality Control and Assurance • Procedure Use and Adherence • Stop When Unsure • Decision Making • Managing Yourself • Are You Ready Checklist • Self-Checking (STAR) • Problem Solving • Peer Checking • Co-Worker Coaching • Managing a Work Group • The Team Advantage • Clear Communication • 3-Way Communication • Interpersonal Communication • Turnover
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<ul style="list-style-type: none"> • Statistical Process Control: <ul style="list-style-type: none"> ▪ Basic Control Charts • Troubleshooting: Basic Concepts • Plant Science: Basic Electrical Principles • Plant Science: Basic Electrical Circuits • Electrical Maintenance: Battery Systems <ul style="list-style-type: none"> ▪ Fans • Plant Science: Basic Principles • Plant Science: Fluid Systems • Plant Science: Forces and Machines • Plant Science: Gases and Flowing Liquids • Plant Science: Solids and Liquids 	<ul style="list-style-type: none"> • Discipline <p><i>Safety Courses</i></p> <ul style="list-style-type: none"> • Respirator Fit Testing • Workplace Ergonomics • Understanding Forklifts • Forklift Safety Checks • Safe Forklift Operation • Driving Safety • Electrical Safety • Asbestos: Hazard Awareness • Training • Hazard Communication • HazWoper: Introduction • HazWoper: First Responder - Awareness Level • Transporting Hazardous Materials
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Tier 2 - Components and Subsystems

<p><i>Operations Courses</i></p> <ul style="list-style-type: none"> • Basic Electrical Safety • Operator Responsibilities: <ul style="list-style-type: none"> ▪ Basic Operator Responsibilities • Operator Responsibilities: Communication • Operator Responsibilities: <ul style="list-style-type: none"> ▪ Plant Production and Safety • Operator Responsibilities: <ul style="list-style-type: none"> ▪ Trends, Maintenance and Emergencies <p><i>Electrical Courses</i></p> <ul style="list-style-type: none"> • Electrical 1: Electrical Safety • Sources of Electricity • Electrical Equipment: Electrical • Production and Distribution • Electrical 2: Electrical Lighting • Basic Control Circuits • Industrial Switches • Voltage and Current Principles 	<ul style="list-style-type: none"> • On-The-Job-Training: Preparation • On-The-Job-Training: <ul style="list-style-type: none"> • Implementation and Evaluation • Process Sampling: Testing, Samples • Statistical Process Control: <ul style="list-style-type: none"> ▪ Process Variations • Environmental Awareness <ul style="list-style-type: none"> • DC Circuits • Using Electrical Test Equipment • Electromagnetic Relays • Electrical Maintenance: Fasteners • Electrical 2: Grounding • Grounding • Fuses • Ground Fault Interrupters • Maintenance of High-Voltage • Circuit Breakers • AC Generator Basics • DC Generator Basics • DC Fundamentals Review
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<ul style="list-style-type: none"> • Magnets and Magnetic Fields • Transformers • Capacitors 1 • Resistance • Inductors 1 • Inductors 2 • Alternating Current • Alternating and Direct Current • Parallel Circuits • Series Circuits • Series-Parallel Circuits • Ohm's Law • Kirchhoff's Law • Use of Ohm's & Kirchhoff's Laws 	<p><i>Mechanical Courses</i></p> <ul style="list-style-type: none"> • Sliding Surface Bearings, Part 1 • Sliding Surface Bearings, Part 2 • Rolling Contact Bearings, Part 1 • Rolling Contact Bearings, Part 2 • Basic Lubrication • Lubrication: Basics • Equipment Lubrication: Using • Lubricants • Safety: Basics
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Tier 3: Systems and Control

Instrumentation and Control Courses

CORE: Principles of Calibration

Tier 4: Function, Site and Product-Specific Skills

Power Generation Courses

<ul style="list-style-type: none"> • Power Plant Systems: Power and Energy • Boiler Efficiency 2 - Oil and Gas Fired Furnaces • Efficient Operation of Oil and Gas Fired Boilers • Analysis of Boiler Efficiency • Boiler Instruments and Control • Efficient Boiler Operation • Turbine Efficiency 1 • Cycle Efficiency • Material Handling: Tank Trucks • Power Plant Operation: Basic Principles • Power Plant - Power & Energy • Power Plant - Power Generation • Electrical Energy and Power • Power Plant Systems: Power Generation • Power Plant Turbines: Bearings and 	<ul style="list-style-type: none"> • Turbine Efficiency 2 • Turbine Efficiency 3 • Analysis of Turbine Efficiency • Condenser Efficiency • Efficient Condenser Operation • Feedwater Heater Efficiency • Power Plant Efficiency – Problems and Analysis • Efficient Power Plant Operation • Feedwater Systems • Power Plant - Condensate & Feedwater Systems • Power Plant- Condenser & Circulation Water • Power Plant Systems: Steam Systems • Power Plant - Steam Systems • P. P. SYSTEMS: Condenser and Circulating Water • Steam Turbines • Coal Handling: Overview Module I Coal Handling: Overview Module II
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<p>Operation</p> <ul style="list-style-type: none"> • Combustion Turbine: Components • Combustion Turbine: Support Systems 2 • Power Plant Boilers: Startup & Shutdown • Power Plant Boilers: Normal Operations • Power Plant Boilers: Combustion & Operation • Boilers: Basic Principles and Types • Boilers: Combustion, Water & Steam • Power Plant Boilers: Water & Steam • P. P. Boilers: Abnormal Conditions & Emergencies • Combustion Turbine: Normal Operations • Combustion Turbine: Principles • Introduction to Heat Rate Improvement • Combustion Turbine: Support Systems 1 • Principles of Heat Transfer • Power Plant Thermodynamics • Boiler Efficiency 1 - Air Heaters and Preheaters • Boiler Efficiency 2 Windboxes, Burners & the Furnace • Boiler Efficiency 3 - Superheaters, Reheaters and the Economizer • Combined Cycle – Normal Operations • Combined Cycle: Abnormal Operations • C. CYCLE: Heat Recovery Steam Generators • Combined Cycle: Distributed Control Systems • Furnaces: Furnace Introduction • Furnaces: Startup and Shutdown • Furnaces: Operating Conditions • Power Plant - Steam Cycle • Power Plant Systems: Steam Cycle • Power Plant Turbines: Steam Flow • Power Plant Systems: Condensate & 	<ul style="list-style-type: none"> • Coal Handling: Overview Module III • Coal Handling: Bringing in Barges • Coal Handling: Conveyors • Coal Handling: Rail Yard Operations • Coal Handling: Car Dumpers • Coal Handling: Bulldozers • Coal Handling: Coal Pile Management • Coal Handling: Coal Yard Maintenance • Coal Handling: Ash Handling • Coal Handling: Dust Control • Coal Handling: Dust Control Equipment I • Coal Handling: Dust Control Equipment II • Coal Handling: Handling Wet & Frozen Coal • Coal Handling: Stackers • Coal Handling: Trippers • Coal Handling: Auxiliary Equipment • Coal Handling: Control Equipment • Coal Handling: Coal Preparation Equipment • Environmental Protection: Air Pollution • Environmental Protection • Systems: Water Pollution • Power Plant Operation: Safety and Pollution Control • Power Plant Operations: Fundamentals of Process Solubility • Power Plant Protection: Fundamentals • P. P. Protection: Boiler and Turbine Protections • Power Plant Protection: Integrated Systems • Water Treatment: Wastewater 1 • Water Treatment: Wastewater, Part 1 • Water Treatment: Wastewater, Part 2 • Water Treatment: Wastewater 2 • Environmental Protection: Water • Pollution & Waste Disposal
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