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TRAINING ON
HEAVY ELECTRICALS

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ABOUT US

Welcome to Pertecnica, where knowledge meets expertise! As a leading employee training institute, we specialize in a diverse range of sectors, providing top-notch induction trainings, refresher courses, and elevating skills through our upgradation programs. We take pride in offering mandatory trainings that ensure compliance and safety trainings across various sectors/industries especially in the dynamic sector of Heavy Electricals. At Pertecnica, we are your partners in growth, fostering a culture of continuous learning and development. Join us on a transformative journey.

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INDUCTION TRAININGS

- Heavy Electricals

Electrical Systems and Equipment Overview:

- Introduction to various electrical systems, including transformers, generators, and switchgear.
- In-depth understanding of the fundamental principles behind heavy electrical equipment.
- Overview of the manufacturing processes and quality standards applicable to electrical systems.

Safety Protocols in Heavy Electricals Industry:

- Comprehensive training on safety regulations and protocols specific to heavy electricals.
- Emergency response procedures, emphasizing electrical safety measures.
- Hands-on exercises to demonstrate the correct usage of personal protective equipment (PPE) and safe working practices.

Quality Management in Heavy Electrical Manufacturing:

- Understanding the importance of quality control in heavy electrical equipment.
- Introduction to industry standards and certifications (e.g., ISO 9001).
- Training on quality assurance processes and continuous improvement methodologies.

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Materials and Components Used in Heavy Electricals:

- Identification and understanding of materials used in heavy electrical manufacturing.
- Training on the selection and properties of key components, such as insulation materials and conductors.
- Hands-on sessions for inspecting and testing materials and components.

Electrical Design Principles and Software Tools:

- Introduction to electrical design principles applicable to heavy electrical systems.
- Training on industry-standard design software for electrical engineering.
- Practical exercises to create and analyze electrical designs for heavy equipment.

Project Management in Heavy Electrical Manufacturing:

- Overview of project management methodologies and tools.
- Training on planning, scheduling, and executing projects in the heavy electricals industry.
- Case studies to understand the challenges and best practices in project management.

Environmental and Sustainability Practices:

- Understanding the environmental impact of heavy electrical manufacturing.
- Compliance with environmental regulations and sustainability practices.
- Training on eco-friendly manufacturing processes and waste reduction initiatives.

Customer Relations and Communication Skills:

- Developing effective communication skills for interacting with clients and stakeholders.
- Understanding customer requirements and expectations in the heavy electricals industry.
- Role-playing exercises to enhance customer service and communication proficiency.

Advanced Manufacturing Technologies in Heavy Electricals:

- Introduction to advanced manufacturing technologies, including automation and robotics.
- Training on the latest manufacturing equipment used in heavy electrical production.
- Practical sessions to operate and troubleshoot advanced machinery.

Ethics and Integrity in Heavy Electrical Industry:

- Training on ethical conduct and integrity in the workplace.
- Understanding the importance of ethical decision-making in heavy electrical manufacturing.
- Discussions on maintaining a culture of transparency and accountability.

REFRESHER TRAININGS

- Heavy Electricals

Advanced Electrical Systems Troubleshooting Refresher:

- Review of advanced troubleshooting techniques for electrical systems.
- Hands-on exercises to refresh skills in identifying and resolving complex electrical issues.
- Updates on the latest diagnostic tools and technologies in the heavy electricals industry.

Safety Practices and Compliance Refresher:

- Refresher on safety regulations specific to heavy electrical equipment.
- Practical scenarios to reinforce safety protocols and emergency response procedures.
- Updates on new safety standards and technologies applicable to the industry.

Quality Control and Assurance Refresher:

- Review of quality control processes and industry standards.
- Case studies to analyze past quality challenges and identify improvement opportunities.
- Training on the latest quality assurance methodologies in heavy electrical manufacturing.

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Innovations in Electrical Design and Engineering Refresher:

- Updates on recent advancements in electrical design principles.
- Refreshing skills in using the latest design software and tools.
- Case studies and projects to apply innovative design solutions to real-world challenges.

Materials and Components Inspection Refresher:

- Refresher on the identification and inspection of materials used in heavy electrical manufacturing.
- Hands-on exercises for inspecting and testing key components for quality assurance.
- Updates on new materials and components entering the market.

Energy Efficiency and Sustainability Practices Refresher:

- Review of energy-efficient manufacturing practices in heavy electricals.
- Updates on sustainability initiatives and environmental regulations.
- Practical exercises to optimize manufacturing processes for energy efficiency.

Advanced Project Management Techniques Refresher:

- Review of advanced project management methodologies applicable to heavy electrical projects.
- Case studies on successfully managed projects within the industry.
- Practical exercises to enhance project planning, execution, and monitoring skills.

Cybersecurity in Heavy Electrical Systems Refresher:

- **Refresher on cybersecurity principles for embedded systems in heavy electrical equipment.**
- **Updates on the latest cybersecurity threats and protective measures.**
- **Practical exercises to reinforce secure coding practices and threat mitigation strategies.**

Customer Relationship Management Refresher:

- **Review of effective communication and relationship-building skills with clients.**
- **Role-playing exercises to handle customer inquiries, feedback, and concerns.**
- **Updates on customer expectations and industry trends in heavy electricals.**

Industry Regulations and Compliance Refresher:

- **Review of industry regulations affecting heavy electrical manufacturing.**
- **Updates on changes in compliance requirements and standards.**
- **Case studies to understand the implications of non-compliance and legal aspects.**

SKILL UPGRADATION PROGRAMME - Heavy Electricals

Advanced Electrical Design and Simulation Skills:

- In-depth training on advanced electrical design principles and methodologies.
- Hands-on experience with cutting-edge design software and simulation tools.
- Project-based assignments to apply advanced design concepts to real-world scenarios.

Robotics and Automation Integration:

- Training on integrating robotics and automation into heavy electrical manufacturing processes.
- Hands-on programming and operation of industrial robots.
- Optimization of manufacturing workflows through automated systems.

Digital Twin Technology in Heavy Electricals:

- Understanding and implementation of digital twin technology for electrical systems.
- Practical exercises to create and manage digital twins of heavy electrical equipment.
- Application of digital twins for predictive maintenance and performance optimization.

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Data Analytics for Manufacturing Optimization:

- Training on leveraging data analytics for process optimization in heavy electrical manufacturing.
- Use of data analytics tools to analyze production data and identify efficiency improvements.
- Real-time monitoring and decision-making based on data-driven insights.

Advanced Materials and Component Selection:

- Exploration of advanced materials used in heavy electrical equipment.
- In-depth knowledge of the properties and applications of advanced electrical components.
- Application of material science principles in selecting materials for improved performance.

Energy Storage Systems Integration:

- Understanding and integration of energy storage systems into heavy electrical equipment.
- Training on the latest battery technologies and their applications.
- Practical exercises on designing electrical systems with energy storage capabilities.

Electromagnetic Field Simulation Techniques:

- Training on electromagnetic field simulation software for accurate analysis.
- Simulation of electromagnetic fields in heavy electrical equipment.
- Application of simulation results to optimize designs and ensure compliance with standards.

Leadership and Management Skills for Technical Professionals:

- **Development of leadership and management skills tailored for technical roles.**
- **Communication and team-building strategies for leading technical teams.**
- **Project management skills to effectively oversee complex projects.**

Innovation and Creativity in Heavy Electricals:

- **Encouraging a culture of innovation within the organization.**
- **Techniques for fostering creativity among employees.**
- **Case studies and workshops on successful innovations within the heavy electricals industry.**

Regulatory Compliance and Global Standards:

- **In-depth training on international regulations and standards in heavy electrical manufacturing.**
- **Compliance strategies to meet global standards for safety and quality.**
- **Updates on changes in regulations and their impact on manufacturing processes.**

MANDATORY TRAINING
- Heavy Electricals

Occupational Safety and Health Training:

- Comprehensive training on occupational safety regulations relevant to heavy electrical manufacturing.
- Hazard identification and risk assessment specific to the industry.
- Hands-on exercises for the correct usage of personal protective equipment (PPE) and emergency response procedures.

ISO 9001 Quality Management System Training:

- In-depth understanding of the ISO 9001 quality management system.
- Implementation of quality control processes and procedures.
- Training on conducting internal audits to ensure compliance with ISO 9001 standards.

Electrical Code Compliance and Standards Training:

- Overview of national and international electrical codes and standards.
- Interpretation and application of electrical codes in heavy electrical equipment manufacturing.
- Compliance strategies to meet regulatory requirements and industry standards.

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Environmental Sustainability and Compliance Training:

- Understanding the environmental impact of heavy electrical manufacturing.
- Compliance with environmental regulations and sustainability practices.
- Training on eco-friendly manufacturing processes and waste reduction initiatives.

Electrical Equipment Testing and Certification Training:

- Hands-on training for conducting tests on heavy electrical equipment.
- Understanding the certification requirements and processes.
- Interpretation of test results and documentation for compliance purposes.

Ethics and Integrity Training:

- Training on ethical conduct and integrity in the workplace.
- Case studies on ethical decision-making in the heavy electricals industry.
- Discussions on maintaining a culture of transparency and accountability.

Customer Relations and Communication Skills Training:

- Developing effective communication skills for interacting with clients and stakeholders.
- Understanding customer requirements and expectations in the heavy electricals industry.
- Role-playing exercises to enhance customer service and communication proficiency.

Legal and Regulatory Compliance Training:

- **Overview of legal requirements and regulations governing heavy electrical manufacturing.**
- **Training on compliance with trade regulations and export controls.**
- **Case studies and scenarios to understand the legal implications of non-compliance.**

Emergency Response and Crisis Management Training:

- **Comprehensive training on emergency response protocols specific to heavy electrical manufacturing.**
- **Simulated scenarios to practice crisis management and decision-making.**
- **Coordination with external emergency services and agencies.**

Anti-Corruption and Bribery Prevention Training:

- **Understanding the risks associated with corruption and bribery in the industry.**
- **Training on anti-corruption laws and regulations.**
- **Implementation of policies and procedures to prevent corruption in business practices.**
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SAFETY TRAINING
- Heavy Electricals

Electrical Safety Training:

- **Hazard Identification: Training on recognizing electrical hazards in the workplace, including exposed wires, faulty equipment, and potential electrical shock risks.**
- **Lockout/Tagout Procedures: In-depth guidance on implementing lockout/tagout procedures to isolate and de-energize electrical systems during maintenance or repair work.**
- **Personal Protective Equipment (PPE): Education on the proper selection and use of PPE, including insulated gloves, safety glasses, and arc-flash-resistant clothing.**

Machine Guarding and Equipment Safety:

- **Understanding Machine Hazards: Training employees to identify and mitigate risks associated with heavy electrical equipment, emphasizing moving parts, pinch points, and automated systems.**
- **Proper Guarding Techniques: Instruction on the importance of machine guarding and implementation of safety barriers to prevent accidental contact with hazardous equipment.**
- **Routine Inspection: Guidance on regularly inspecting machine guards and safety features to ensure they remain effective.**

Chemical Handling and Hazardous Materials Training:

- **Chemical Risk Assessment: Training employees to assess the risks associated with handling hazardous materials commonly used in heavy electrical manufacturing.**
- **Proper Storage and Labeling: Instruction on safe storage practices and proper labeling of hazardous chemicals to prevent accidents and exposure.**
- **Emergency Response Protocols: Education on the correct procedures for responding to chemical spills, leaks, or exposures, including the use of emergency showers and eye wash stations.**

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Fall Protection and Working at Heights:

- **Fall Hazard Identification: Training on recognizing potential fall hazards in the workplace, especially when working on elevated platforms or structures.**
- **Correct Harness Usage: Instruction on the proper fitting, adjustment, and use of fall protection harnesses and equipment.**
- **Rescue Procedures: Education on procedures for rescuing a worker who has fallen, emphasizing prompt and safe response.**

Fire Safety and Emergency Evacuation Training:

- **Fire Prevention Strategies: Guidance on preventing fires in the workplace, including proper storage of flammable materials and regular equipment inspections.**
- **Fire Extinguisher Usage: Hands-on training on the correct use of fire extinguishers, with emphasis on different types of fires and corresponding extinguisher types.**
- **Evacuation Drills: Regular drills to ensure employees are familiar with emergency evacuation routes and assembly points.**

Confined Space Entry Training:

- **Identification of Confined Spaces: Training on recognizing confined spaces in the workplace, such as equipment enclosures or tanks.**
- **Proper Entry Procedures: Instruction on safe entry and work practices within confined spaces, including ventilation and continuous monitoring.**
- **Emergency Rescue Protocols: Education on the procedures for rescuing workers in confined spaces, emphasizing the importance of a designated rescue team.**

Tool and Equipment Safety:

- **Proper Tool Usage: Training on the correct usage of hand and power tools in heavy electrical manufacturing, emphasizing safety features and precautions.**
- **Equipment Inspection: Instruction on regularly inspecting tools and equipment for wear, damage, or malfunction, and reporting any issues promptly.**
- **Personal Responsibility: Emphasis on the importance of personal responsibility in maintaining a safe work environment, including proper tool storage and adherence to safety guidelines.**

Radiation Safety Training:

- **Radiation Hazards Awareness: Training on identifying and understanding the hazards associated with radiation-emitting equipment used in heavy electricals.**
- **Shielding and Containment: Instruction on the use of shielding materials and containment measures to reduce radiation exposure risks.**
- **Dosimetry and Monitoring: Education on the importance of regular monitoring and dosimetry to track and limit individual radiation exposure.**