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CERTIFIED LIGHTING EFFICIENCY PROFESSIONAL

CLEP OVERVIEW

ONLINE PROFESSIONAL COURSES LED BY THE WORLD'S TOP SPECIALISTS

ONLINE TRAINING BY KRISHNAJI PAWAR

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MODULE 5

Lighting and Control System Maintenance and Commissioning.

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CERTIFIED LIGHTING EFFICIENCY PROFESSIONAL CLEP OVERVIEW

Lighting and control systems are crucial components in modern buildings, influencing aesthetics, functionality, energy efficiency, and operational costs. Maintenance and commissioning of these systems are essential processes to ensure optimal performance, longevity, and compliance with safety standards.

Learning Objectives

- Introduction and Course Outline
- Quality Lighting for High-Performance Buildings
- LED Technology & its Operating Characteristics
- Lighting Quantity and Quality Fundamentals
- Lighting and control system maintenance and commissioning.
- Environmental Concerns
- Certified Lighting Efficiency Specialist Certification
- Summary and Resources
- CLEP Practice Test V.4.1_Test Your Knowledge

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INTRODUCTION

Lighting and Control Systems in Modern Buildings

- Crucial components in modern buildings influencing aesthetics, functionality, energy efficiency, and operational costs.
- Maintenance and commissioning of these systems are essential for optimal performance, longevity, and safety standards compliance.

Commissioning Process

- Involves pre-commissioning, installation verification, functional testing, documentation and training, and maintenance.
- Pre-commissioning includes a comprehensive design review, specification verification, fixture placement, and control system integration.
- Installation verification ensures all components are installed according to manufacturer's specifications and design documents.
- Functional testing includes system calibration and performance verification.

LIGHTING AND CONTROL SYSTEM MAINTENANCE AND COMMISSIONING +

Documentation and Training

- As-built documentation records deviations from the original design and provides detailed drawings for future maintenance.
- User training educates building occupants and maintenance staff about the system's operation.

Maintaining and Preventive Maintenance

- Proactive maintenance includes routine inspections and testing of occupancy sensors and daylighting controls.
- Preventive maintenance includes scheduled tasks to prolong the lifespan and reliability of lighting systems.
- Advanced control systems often incorporate monitoring capabilities for real-time data analysis and adaptive maintenance.

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DESIGNING FOR MAINTENANCE - WHAT THE OWNER SHOULD ASK:

- What are the designer's recommendations for maintenance so that the initial design can be sustained over time?
- What impacts would planned maintenance have on the lighting design versus reactive maintenance? What savings are possible in equipment and operating costs?
- Can the designer help the owner develop a written maintenance policy?
- What resources are available to safely recycle spent lamps?
- Does my organization have the capacity required to execute a planned maintenance program, or should we speak to a lighting management company that provides these services?

WHAT THE DESIGNER SHOULD PROVIDE +

- A written maintenance policy for the lighting system.
- Minimized number of lamp types used in the space, wherever practical, to reduce possibility of errors in lamp replacement.
- Luminaire locations that are sensitive to how a luminaire will be maintained (an incandescent pendant luminaire over an escalator, for example, might make a dramatic aesthetic impact but would be difficult and costly to maintain).
- An effective lighting design that meets the design intent for the space while minimizing operating and maintenance costs with proper maintenance methods.

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THE PLANNED MAINTENANCE POLICY

- The lighting system designer should provide a written maintenance plan to the owner.
- The plan should include the design intent, maintenance operations, equipment list, special maintenance considerations, commissioning report, disposal recommendations, and operating and maintenance manuals.
- The design intent is crucial for maintaining the integrity of the lighting design.
- The maintenance plan should specify planned maintenance operations, schedules, and disposal methods.
- The designer should communicate maintenance assumptions to the owner.
- A comprehensive lighting equipment schedule should describe each type of luminaire for each space.
- The plan should include special considerations for equipment like air pollution levels, occupancy sensors, extended-life lamps, and periodic adjustments.
- The owner should receive a commissioning report for all lighting controls.
- The electrical contractor should provide operating and maintenance manuals for the installed lighting and control system.

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