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COMMISSIONING CERTIFIED TECHNICIAN

CXCT REFRESHER

ONLINE TRAINING BY KRISHNAJI PAWAR

LEED AP(BD+C),GSAS CGP,GCP,ISO 14001

KNOWLEDGE IS POWER

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MODULE

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Required O&M Paperwork & Training Preventive Maintenance

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COMMISSIONING CERTIFIED TECHNICIAN CXCT REFRESHER

The commissioning phase of a project involves the transition from construction to operational readiness, where systems undergo testing, verification, and fine-tuning to meet operational requirements. This phase is crucial for establishing effective operations and maintenance (O&M) protocols, which include the preparation and organization of necessary paperwork and training of personnel.

Learning Objectives

- Document Observations & Interpret Basic Terminal Unit Trends.
- Test Airside ,water,control system / Troubleshooting
- Required O&M paperwork and training Preventive maintenancetems
- Retro-commissioning
- Commissioning professional certification & its importance.
- Point-to-point calibrate MEP & sensor systems.
- Green building rating systems & commissioning
- Summary and Resources
- CxCT Practice Exam: Test Your Knowledge!



INTRODUCTION

- The commissioning phase of a project involves transitioning from construction to operational readiness, testing, verifying, and fine-tuning systems.
- Effective operations and maintenance (O&M) protocols are crucial for maintaining system reliability and longevity.

O&M DOCUMENTATION



- O&M documentation provides a comprehensive reference for system operation, maintenance, and troubleshooting.
- Types of O&M documentation include Operation Manuals, Maintenance Manuals, and Warranty Documentation.
- Maintenance Manuals provide detailed instructions on system functioning, such as system overview, operating procedures, and safety guidelines.
- Warranty Documentation specifies terms and conditions of coverage for equipment and systems, including coverage details and claim procedures.

DOCUMENTATION MANAGEMENT

- Proper management of O&M documents is essential for effective communication and compliance.
- Documentation management includes version control, accessibility, and training records.



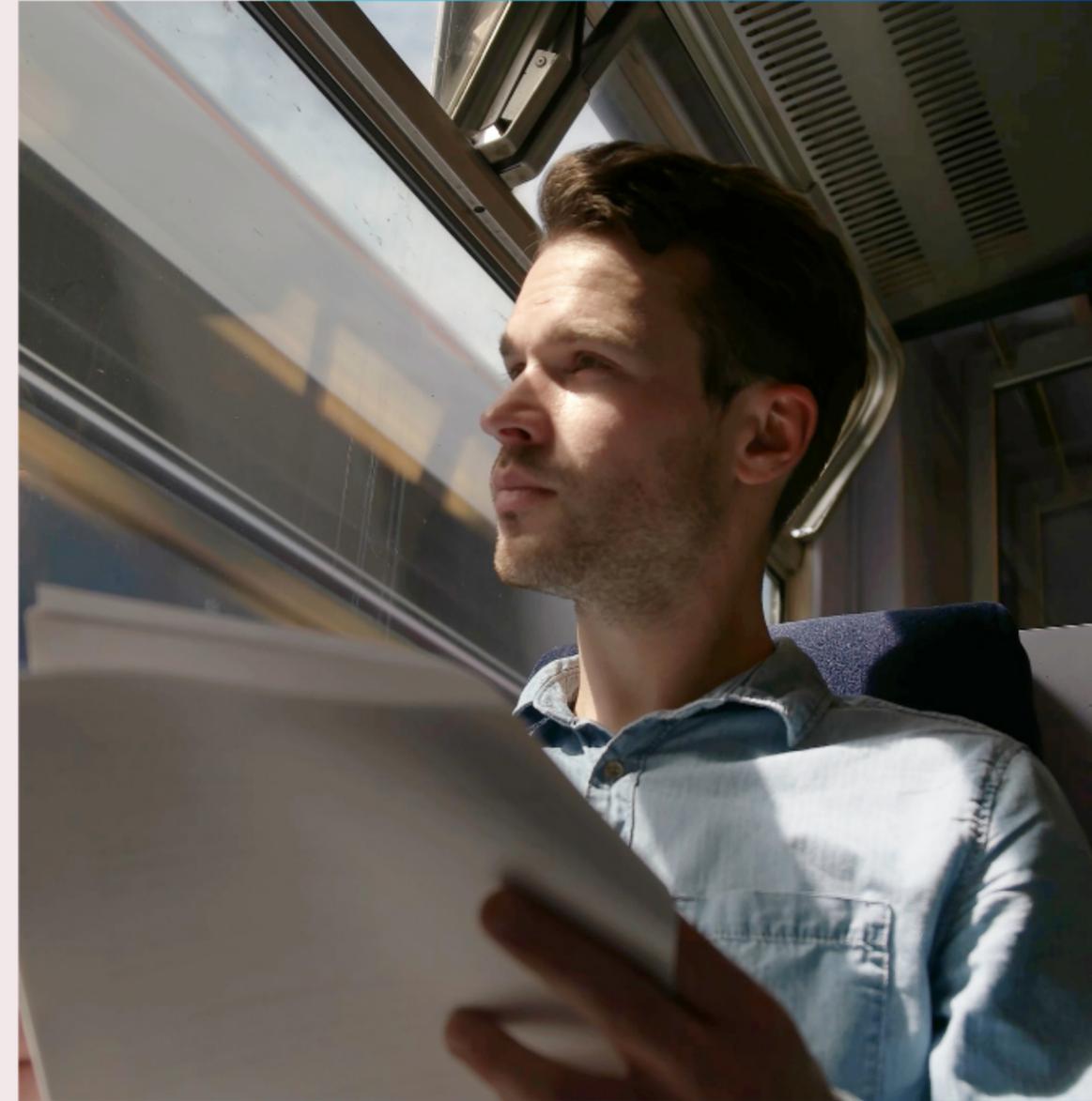
TRAINING FOR PREVENTIVE MAINTENANCE

- Training is essential to ensure personnel are knowledgeable and capable of executing preventive maintenance tasks effectively.
- Training components include initial training, ongoing training, and evaluation of training effectiveness.
- The integration of comprehensive O&M paperwork and effective training protocols during the commissioning phase is fundamental to achieving operational excellence and sustainability.



BUILDING SYSTEMS PERFORMANCE AND OPERATIONS AND MAINTENANCE

- Building systems performance is sustained post-project through effective facility operations and maintenance (O&M) procedures, detailed documentation, and comprehensive staff training.
- O&M should be considered from the Project Initiation Phase to extend the system's usable life.
- ANSI/ASHRAE/IES Standard 202-2018: Commissioning Process for Buildings and Systems includes sections on training and operation.
- Poor O&M can lead to degraded performance, failure to achieve the OPR or CFR, and potential for expensive system repairs or premature equipment replacement.
- Modern buildings often include multiple interconnected systems, which are critical to human life and safety.
- An effective O&M program includes training, staffing, budgeting, and management procedures.
- O&M staff can include professionals managing, operating, maintaining, controlling, protecting, and cleaning building systems.
- Building engineers perform much of the daily O&M work on building systems, working closely with the facility management or property management team.





NECESSARY O&M DOCUMENTATION AND TRAINING

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ROLE OF O&M DOCUMENTATION



- Provides detailed instructions on system operation and maintenance.
- Includes Operation Manuals, Maintenance Manuals, As-Built Drawings, Technical Specifications, and Warranty Information.

IMPORTANCE OF COMPREHENSIVE O&M DOCUMENTATION

- Facilitates Knowledge Transfer: Ensures knowledge is not lost during personnel changes.
- Enhances Safety: Provides clear operational guidelines and safety protocols.
- Improves Efficiency: Streamlines maintenance procedures and reduces downtime.
- Supports Compliance: Helps organizations comply with regulatory requirements regarding documentation and maintenance practices.



TRAINING IN SYSTEM COMMISSIONING

- Includes Initial Training Sessions, On-the-Job Training, Refresher Courses, and Assessment and Certification.
- Reduces Human Error: Equips personnel with skills necessary to operate systems correctly.
- Promotes System Longevity: Well-trained staff are more likely to perform maintenance tasks effectively.
- Enhances Troubleshooting Skills: Training enables personnel to identify and resolve issues swiftly.



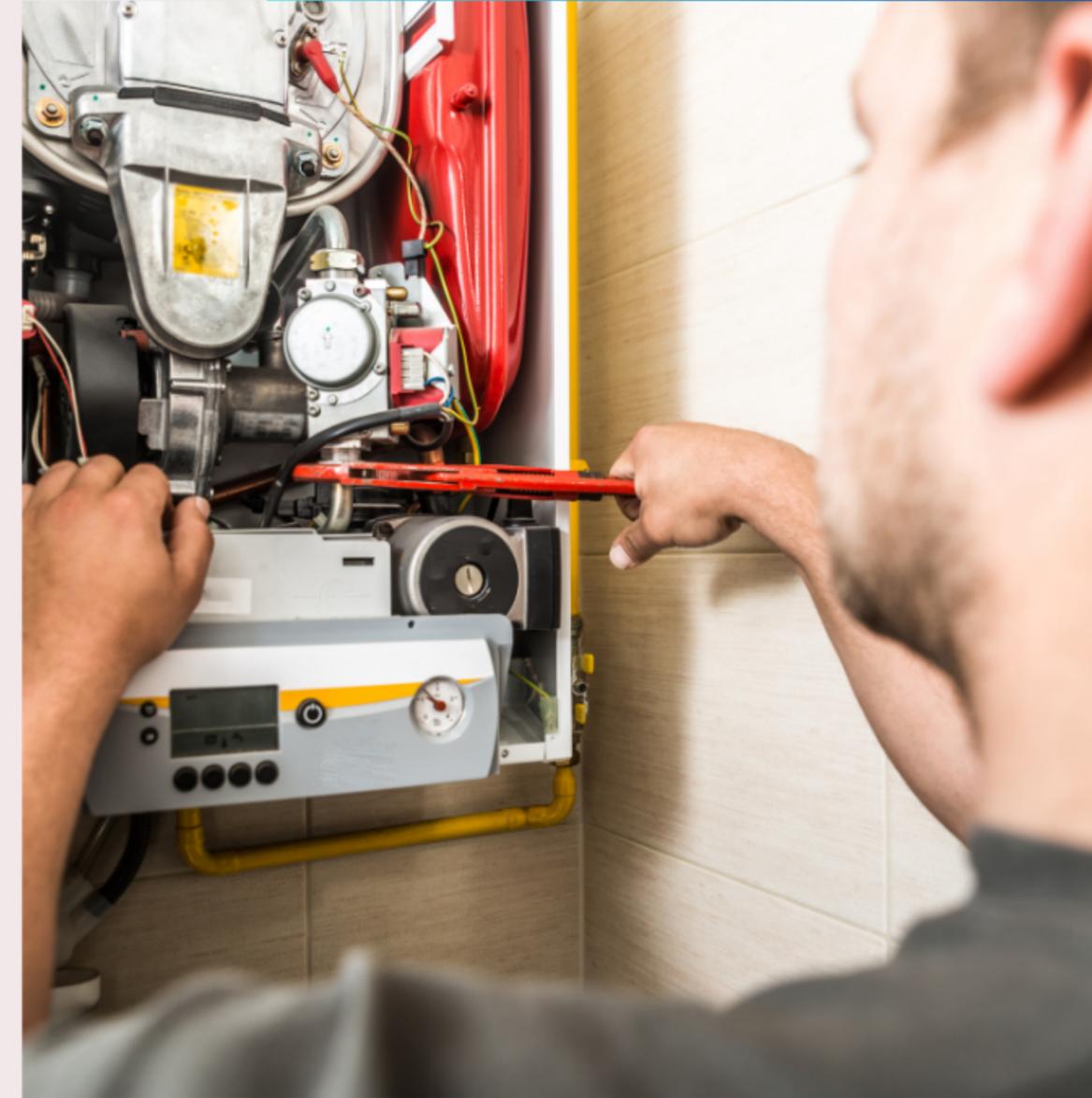


PREVENTATIVE MAINTENANCE PRACTICES

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DEFINING PREVENTATIVE MAINTENANCE

- Defined as scheduled maintenance activities to prevent unexpected equipment failures or to mitigate system performance degradation.
- Classified into Time-Based Maintenance (TBM), Condition-Based Maintenance (CBM), and Predictive Maintenance (PdM).



IMPORTANCE OF PREVENTATIVE MAINTENANCE



- Contributes to Operational Efficiency, System Reliability, Safety Compliance, and Sustainability.
- Ensures equipment lifespan and reduces waste through thoughtful resource management.

IMPLEMENTING PREVENTATIVE MAINTENANCE IN BUILDING COMMISSIONING

Starts during the design phase and extends throughout the operational lifecycle of the building.

Key steps include:

- Development of a Maintenance Plan.
- Training and Documentation.
- Regular System Inspections.
- Use of Technology.
- Feedback Loops.



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