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COMMISSIONING CERTIFIED TECHNICIAN

CXCT REFRESHER

ONLINE TRAINING BY KRISHNAJI PAWAR

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MODULE
2L1

CCxT's Technical, Communication, and Commissioning Skills

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COMMISSIONING CERTIFIED TECHNICIAN CXCT REFRESHER

The National Environmental Balancing Bureau (NEBB) Certified Commissioning Technician (CXCT) program aims to equip professionals with a comprehensive skill set that encompasses technical expertise, effective communication, and proficiency in commissioning processes. This chapter explores the foundational components of these skills, the application of professional conduct, and the working knowledge of procedural standards that govern practice.

Learning Objectives

- Course Overview and Introduction
- CCxT's Technical, Communication, and Commissioning Skills
- Heating, Ventilation, and Air-Conditioning (HVAC) Systems
- Basics of field TAB verification, HVAC systems and controls
- CxT Responsibilities by Phase
- Pre-function tests include sheet checking and installation tests.
- Point-to-point calibrate MEP and sensor systems.
- Verify TAB pre-functional tests and CxT responsibilities



INTRODUCTION

Technical Skills

- Understanding of various systems like HVAC, plumbing, electrical, and building automation systems.
- Proficiency in measurement techniques and diagnostic tools.
- Ability to identify and resolve issues.
- Role akin to a physician diagnosing a patient.

Communication Skills

- Effective communication is crucial in the commissioning process.
- Key Communication Competencies: Interpersonal Skills, Documentation, Presentation Skills.

Commissioning Skills

- Comprehensive understanding of the commissioning process and effective implementation.
- Key Commissioning Competencies: Planning and Coordination, Verification and Validation, Continuous Improvement.

Application of Professional Conduct

- Adherence to ethical principles, respect for stakeholders, accountability.
- Likened to ethical standards upheld by medical professionals.

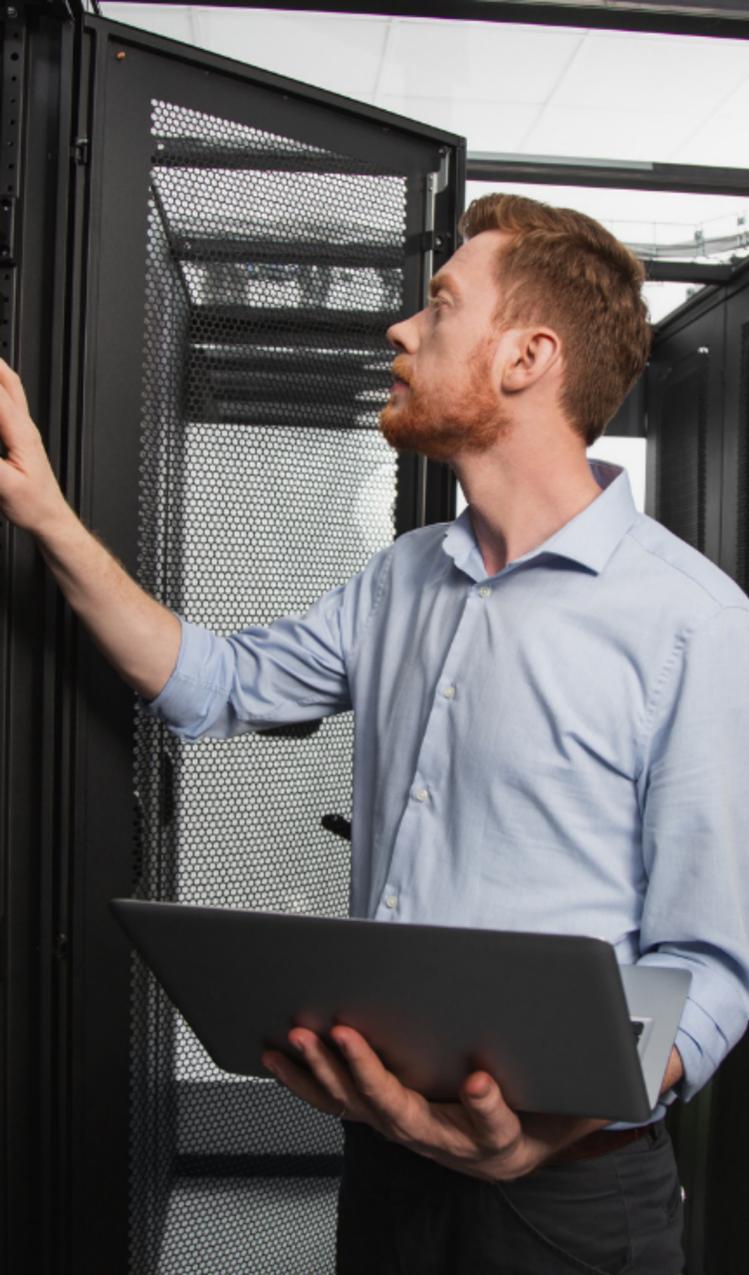
Working Knowledge of Procedural Standards

- Familiarity with industry protocols, guidelines, and regulations governing commissioning practices.
- Key Procedural Standards: NEBB Standards, ASHRAE Guidelines, Local Codes and Regulations.

TECHNICAL, COMMUNICATION, AND COMMISSIONING SKILLS FOR COMMISSIONING

Commissioning Skills

- Project Management: Knowledge of project management methodologies can enhance commissioning effectiveness.
- Quality Assurance and Control: Professionals must implement quality control measures throughout the commissioning process.
- System Integration: Understanding how various systems interact is vital in commissioning.
- Training and Handover: Knowledge transfer to operations staff is essential.

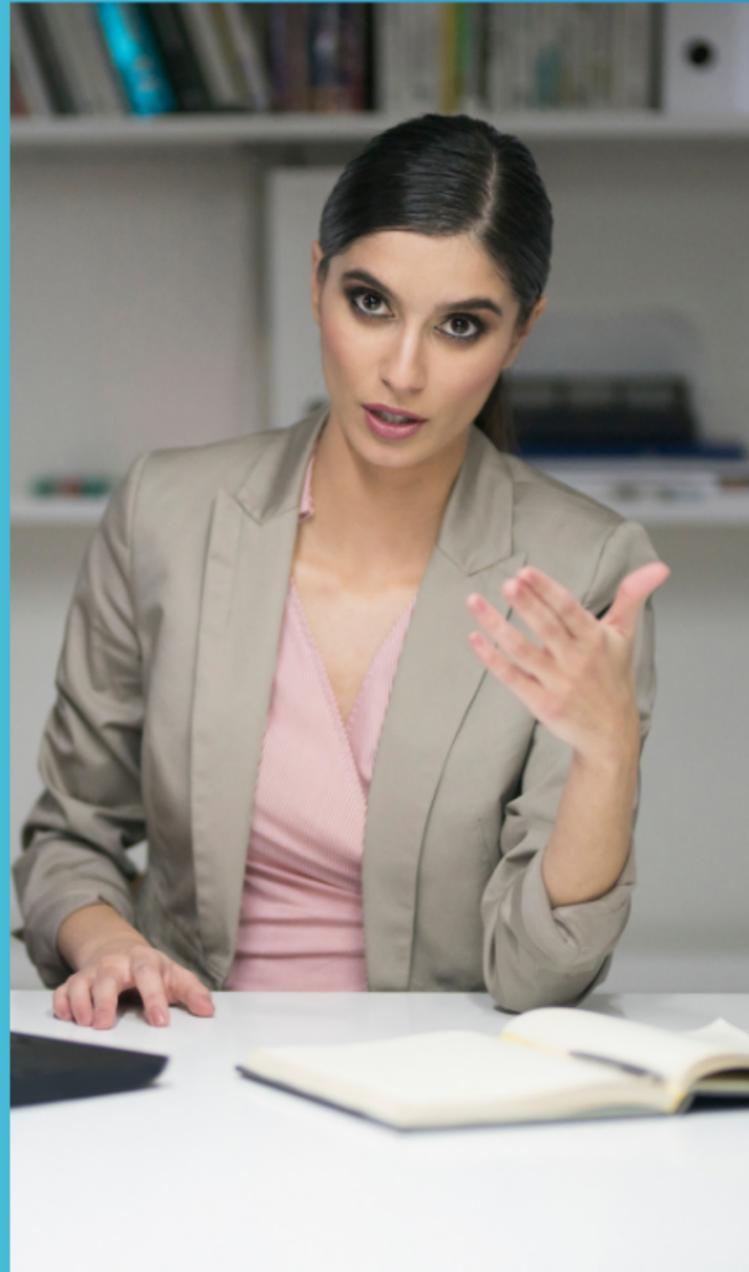


TECHNICAL SKILLS OF CX TECHNICIANS

- Extensive Technical Field Experience: CxTs need hands-on skills to troubleshoot and resolve issues on-site. They must be familiar with various systems like electrical, mechanical, plumbing, and control systems.
- Expert Knowledge of Systems: CxTs must understand system components, performance metrics, and overall design intent. They must understand design documents, system integration, and schedule coordination.
- Knowledge of the Construction Process: CxTs must understand planning, execution, and closeout phases of the construction process. They must coordinate with contractors to ensure systems are tested when they are accessible.
- Thorough Knowledge of Contracting and Construction Management: CxTs must understand contractual obligations of stakeholders and risk management.
- Knowledge of Different Construction Models: CxTs must understand models like Design-Bid-Build, Design-Build, and Construction Management at Risk (CMAR) to effectively navigate the commissioning process.
- Adaptability: CxTs must understand each construction model to navigate the commissioning process effectively.
- Collaboration: Understanding the chosen construction model allows CxTs to foster collaboration among project stakeholders.
- The demand for skilled CxTs is expected to increase due to the evolving construction landscape.



COMMUNICATION SKILLS IN CX TECHNICIANS (CXTS)



- Effective communication is crucial for successful project execution in construction and project management.
- CxTs play a pivotal role in ensuring systems and processes function as intended.
- Communication skills are essential for CxTs to navigate project complexities and enhance collaboration among diverse stakeholders.

Types of Communication Skills

- Verbal Communication: Use of spoken language to convey information, including meetings, phone calls, and face-to-face discussions.
- Written Communication: Involves emails, reports, memos, and documentation.
- Non-Verbal Communication: Use of body language, gestures, and facial expressions to gauge understanding, engagement, and emotional responses.
- Active Listening: Engages actively with contractors and field personnel to understand project requirements and concerns.
- Coordination Skills: Involves organizing and managing activities involving multiple stakeholders.

COMMUNICATION PROTOCOLS

- CxTs must be familiar with communication protocols that dictate how information is shared within a project team.
- Understanding when to utilize each type of communication is critical for maintaining clarity and efficiency.

Team Building Mentality

- Fosters a team-building mentality, creating an environment where all team members feel valued and encouraged to contribute.
- • Effective communication cultivates trust and collaboration, allowing team members to share ideas, voice concerns, and work collectively towards common objectives.



UNDERSTANDING COMMISSIONING SKILLS

Commissioning Skills Overview

- Commissioning is a crucial process in construction and building management that ensures systems and equipment perform as intended.
- It involves systematic documentation and organization of verification, resolution, and testing information.

Key Components of Commissioning Skills

- **Communication:** CxTs must convey complex information clearly to various stakeholders, including contractors, engineers, and clients.
- **Accountability:** CxTs must take responsibility for their actions and decisions, acknowledging mistakes or oversights.
- **Team Building:** CxTs must be adept at building strong teams, similar to a sports team working together to achieve a common goal.



UNDERSTANDING THE COMMISSIONING PROCESS

- Roles and Responsibilities: CxTs must understand their roles and those of others involved in the commissioning process.
- Practical Construction Site Protocols: CxTs must adhere to safety regulations and manage testing procedures.

Documentation in Commissioning

- Resolution Tracking Procedures: CxTs must keep a record of issues and how they were resolved.
- Start-Up Requirements: Understanding what needs to be done to start systems properly is essential for successful commissioning.
- Submittal Reviews: Reviewing documents submitted by contractors ensures they meet project specifications.
- As-Built and Existing Conditions Drawings: These documents show how systems were actually built compared to the original plans.
- Functional Performance Test Techniques: CxTs must know how to carry out tests that verify systems operate as intended.
- Operations and Maintenance (O&M) Documentation: Instructions on how to operate and maintain systems once they are in use.
- Preventative Maintenance Practices: Understanding how to keep systems running efficiently over time is crucial.

Importance of Document Control

- Establishing defined documentation standards: Use of Forms and Templates, Clear and concise language, and Distribution Protocols.



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