BEYOND SMART CITIES

CERTIFIED COMMISSIONING SPECIALIST CCXS ONLINE TRAINING

KRISHNAJI PAWAR, LEED AP BD+C,GSAS CGP,ISO 14001:2015,GCP

COMMISSIONING SPECIALIST CURRICULUM



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MANAGING TRAINING ACTIVITIES

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LEARNING OBJECTIVES



- Develop training plan
- Facilitate training activities
- Training Plan and Materials
- The Economics of Commissioning

TRAINING PLAN AND MATERIALS

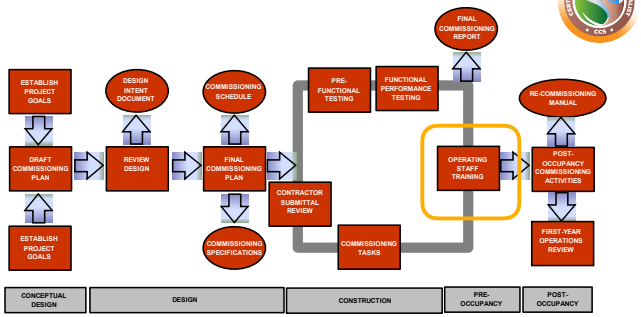
To sustain the benefits of the commissioning program it is imperative the owners operations staff be adequately trained and included in the commissioning process as commissioning test witnesses so staff can experience the dynamic operation of the system firsthand

As with all the other CxA activities ,there must be a plan and discipline for staff training .Thus ,another specified requirement for the prime contractor is to develop the training plan, schedule, including selecting qualified instructors and quality training materials that are approved by the design professional.

Part of the plan must include training for staff about the owner's project requirements ,the basis of design ,and design philosophies developed by the design professional

Even though it is not the prime contractor 's responsibility to coordinate and perform this training (that falls to the CxA professional and design professional),the training must be identified in the CxA plan and schedule so activities that must occur in logical sequence will be scheduled accordingly.

TYPICAL COMMISSIONING PROCESS



FACILITATE TRAINING ACTIVITIES

The Commissioning Authority, along with the Testing Contractor when one is being used, should coordinate the training for the owner's operations staff.

In cases where there is a Test Contractor, the Commissioning Authority holds responsibility for training based on input from the Design Professional, and the Test Contractor coordinates training for systems and equipment covered by the contractor, subcontractor, and vendors.

In all cases all training needs to be integrated into the overall Commissioning Plan and parallel Construction Schedule.

Although much of the training may be on-the-job, training information must be documented, either in written format or by video, etc. for future use by new employees or existing employees participating in refresher training.



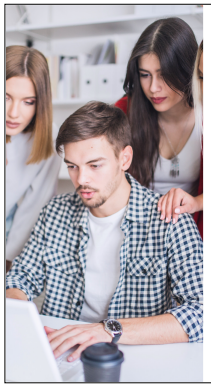
THE ECONOMICS OF COMMISSIONING

- Economic Benefits : Unfortunately, qualitative benefits alone will not make a convincing case for commissioning.
- Commissioning Cost: Determining commissioning cost can vary in range from $0.25 per square foot per year to over $2.50 per square foot per year.
- Commissioning Savings
- Reported Commissioning Cost Savings Cost savings resulting from commissioned versus non-commissioned facilities for energy savings are reported from 8 to 50 percent with average savings of about $.75 per square foot.

THE ECONOMICS OF COMMISSIONING +

The commissioning process can provide savings resulting from the following.

- Improved understanding of the purpose of the facility and the reason for its existence to serve the end user.
- Improved facility and systems because all parties involved in the life cycle are focused on the end users' needs as the primary goal of the facility.
- Improved coordination between the owner, engineer, and contractor resulting in appropriate costs, schedule, and system operation and reduced change orders.
- Improved systems operation, reduced energy consumption, reduced call- backs, and reduced claims and litigation because thorough acceptance tests were conducted, all systems were brought up to operate per design and performance was optimized.
- Reduced maintenance costs because of improved equipment life and reliability.
- Improved maintenance and reduced maintenance man-hours because of available documentation and training. Improved building environment resulting in improved worker productivity.



THE ECONOMICS OF COMMISSIONING

- Cost savings resulting from commissioned versus non-commissioned facilities for energy savings are reported from 8 to 50 percent with average savings of about $.75 per square foot. Cost savings resulting from commissioned versus non-commissioned facilities for maintenance savings are reported from 15 to 35 percent. More information on the importance and economics of commissioning can be found in the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE).


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