

GLOSSARY

Section I

Abbreviations

AE/CM

Architect engineer and construction manager

AH

Air handling

AHU

Air handling unit

ASHRAE

American Society of Heating, Refrigeration, and Air-Conditioning Engineers, Inc.

ASME

American Society of Mechanical Engineers

BOD

Biochemical oxygen demand

CA

Commissioning authority

C/C

Cooling/coil

C4ISR

Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance

CFM

Cubic feet per minute

CHWS

Chilled water system

CO₂

Carbon dioxide

CS

Commissioning specialist

DA/E

Design architect/engineer

DAS

Department of Administrative Services

DDC

Direct digital control

DeCA

Defense commissary agency

DX

Direct expansion

EC

Electrical contractor

ECO

Energy conservation opportunity

EMCS

Energy management control system

EPA

Environmental protection agency

ESPC

Energy savings performance contracts

GC

General contractor

H&RP

Heating and refrigeration plant

H/C

Heating/coil

HEMP

High altitude electromagnetic pulse

HPAC

Heating/Piping/Air Conditioning

HVAC

Heating, ventilating, and air conditioning

IAQS

Indoor air quality system

IM&T

Information management and technology

MC

Mechanical contractor

NaOH

Sodium hydroxide

Na₂SO₃

Sodium sulfate

NC

Normally closed

NFPA

National fire protection association

NO

Normally open

NPDES

National pollution discharge elimination system

N₂H₂

Hydrazine

O & M

Operating and maintenance

O/O

Owner/operator

OSHA

Occupational health and safety administration

O₂

Oxygen

O₃

Ozone

P&Ids

Piping and Instrumentation Design

PIV

Post indicator valves

TM 5-697

PLC

Program Logic Controller

PP

Pneumatic positioner

PPM

Parts per million

PSIG

Per square inch gauge

PTHP

Package terminal heat pump

PVC

Polyvinyl chloride

PVT

Performance verification testing

RMCS

Refrigerant management and control system

SMACNA

Sheet Metal and Air-Conditioning Contractors' National Association, Inc.

TAB

Testing, adjusting, and balancing

USACERL

United States Army Construction Engineers Research Laboratories

USAF

United States Air Force

UV

Ultraviolet

VAV

Variable air volume

VLV

Variable liquid volume

Section II

Terms

Acceptance

When a system's readiness for operation has been demonstrated, verified, documented, and authorized.

Acceptance test

Functional performance test has replaced this terminology.

Authority having jurisdiction

An individual designated by government, the insuring institution and/or the company, who has knowledge of company operations, fire protection systems, and liability to life and property and who has the authority to stop operation of the facility when certain fire protection requirements are not met.

Commissioning

The systematic process of verifying, documenting, and ensuring that the systems in a new facility are designed, installed, functionally tested, and capable of being operated and maintained to perform according to the original design intent and owners' requirements. The process begins in the facilities program phase and progresses through design, construction/start-up, functional performance testing, and post functional performance phases, and lasts at least one year after project-closeout. Commissioning activities include training of operations and maintenance staff. During commissioning, functional performance tests and deferred functional performance tests are conducted on each system. These tests require written authorization for the systems to be accepted as ready for operation in the commissioning process. The commissioning process can be applied throughout the life of the facility. See Re-commissioning. Commissioning requires the participation of all parties involved in the facility delivery cycle from the program phase to the post acceptance phase.

Deferred functional performance tests

Functional performance tests which cannot be accomplished immediately and need to be deferred to a later time because of seasonal reasons, lack of occupancy, deficiencies in other systems, or structures impacting the system under consideration or other reasons. A comprehensive acceptance test schedule including deferred acceptance tests should be developed as part of the acceptance test plan.

Design basis document

All information necessary to accomplish the design intent, including weather data, interior environmental criteria, other pertinent design assumptions, cost goals, and references to applicable codes, standards, regulations, and guidelines.

Design intent

A detailed explanation of the ideas, concepts, and criteria that are defined by the owner to be important. This typically is an expansion of the information provided in the owner's program.

Final acceptance

When all requirements of the commissioning process/plan have been completely satisfied, documented, and authorized as accepted. At this point all of the systems in a facility are deemed ready for operation. Final acceptance occurs at the completion of the post acceptance period and may take one year in duration.

Functional performance test

The full range of checks and tests carried out to determine whether all components, subsystems, systems, and interfaces between systems function in accordance with the contract documents. In this context, "function" includes all modes and sequences of control operation, all interlocks, and conditional control responses and all specified responses during design day and emergency conditions

High altitude electromagnetic pulses (HEMP)

HEMP are generated from the explosion of a nuclear bomb at high altitude. The burst from the bomb may cause large currents or potential differences to be induced in many types of conductors. This energy can couple to wires or any conductor above or below ground and induce signals which cause malfunctioning or destruction of sensitive equipment used in C4ISR facilities.

Post acceptance

The period of time occurring after project-closeout and before final acceptance. The post acceptance period may last for one year. It includes time for remaining or all deferred acceptance tests and the guarantee/warranty period.

Pre-Functional Performance Test

A series of tests for specified equipment or systems, which determine that the systems are installed correctly, start up, and are prepared for the functional performance tests. Often these tests are in a checklist format. The pre-functional test checklists may be completed as part of the normal contractor start-up test

Project-closeout

The point in time when the systems are considered acceptable for the owner and/or his operating and maintaining contractor (O & M) take over operation of the facility and its systems. At this time some or all deferred acceptance tests and guarantee/warranty work will remain to be completed. The post acceptance period begins at project-closeout.

Re-commissioning

A detailed condition assessment/retesting of an existing facilities' systems. During re-commissioning, functional performance tests are conducted on systems to establish acceptability. Re-commissioning requires subsequent "tune-ups" and fixes to bring systems back to design or current operating requirements. It includes all aspects of commissioning. Re-commissioning can occur only if a building or system had been previously commissioned. Re-commissioning involves the continued adjustment, optimization, and modification of systems to meet specified requirements. It includes updating documentation resulting from minor set point adjustments, system maintenance and calibration, major system modifications, and provides for ongoing training of operations and maintenance personnel. As in commissioning, re-commissioning requires authorization of satisfactorily completed tests for the systems to be considered acceptable and ready for operation.

Retro-commissioning

A detailed condition assessment/testing of an existing facilities systems, after the facility has been in operation and for which no commissioning activities have been conducted. Retro-commissioning requires all commissioning activities be performed and may require field work for preparation of drawings and documentation of equipment specifications.

Systems Manual

A document developed for a system that includes as-built drawings, equipment specifications, and equipment manuals which include installation instructions, operating instructions, maintenance instructions, and approvals from fire department inspectors, city, state, regulatory, and insurance officials. The system manual also includes pertinent information gathered during the commissioning process such as a copy of the signed commissioning sign-off sheet, a table of contents, and a list of all items in the manual.