Fire/Smoke Barriers in the Codes - Commissioning

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Objectives

- Highlight issues and trends with respect to commissioning and the model codes
- Identify the relationship between fire/smoke barriers and commissioning
Documents Referenced

- **ICC 1000** – *Application of the Commissioning Process*
  - A draft standard

- **NFPA 3** - *Recommended Practice for Commissioning and Integrated Testing of Fire Protection and Life Safety Systems*
  - On going discussion about converting the document to a standard
What Is Commissioning?

☐ ICC Definition:

  - **Commissioning Process**: A quality-focused process for enhancing the delivery of a project. The process focuses upon verifying and documenting that all of the commissioned systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the Owner’s Project Requirements.

☐ NFPA Definition:

  - **Commissioning (Cx)**. A systematic process that provides documented confirmation that building systems function according to the intended design criteria set forth in the project documents and satisfy the owner’s operational needs, including compliance with applicable laws, regulations, codes, and standards.
This recommended practice applies to passive and active fire protection and life safety equipment and systems including, but not limited to, the following:

1. Infrastructure supporting the building fire protection and life safety systems within the boundaries of the project
2. Emergency communications systems (ECS)
3. Smoke control and management systems
4. Fire-resistant and smoke-resistant assemblies
5. Firestopping
NFPA 3 Application

- **A.1.3.1(8)** Examples include, but are not limited to, floor ceilings and roof decks, doors, windows, barriers, and walls protected by a firestop system or device for through penetration and membrane penetrations, and other fire and smoke control assemblies.

- **A.1.3.1(9)** Examples include, but are not limited to, fire and smoke resistant–rated assemblies protected by a firestop system or device for through-penetrations and membrane penetrations.
When is Commissioning Required?

- **ICC**
  - Where commissioning is required by code, it shall be performed by qualified and certified commissioning providers and specialists.
  - IgCC, IECC
  - IBC & IFC – smoke control systems

- **NFPA**
  - NFPA 3 establishes a process
When Does Commissioning Begin?

- NFPA - The fire protection and life safety commissioning team should be established during the planning phase.

- ICC - Initiation the Commissioning Process and retention of the commissioning provider at the beginning of the project, determination of the roles and responsibilities of the project and commissioning teams and development and execution of procedures and contracts.
Who Is The Commissioning Team?

- (1) Owner
- (2) Commissioning authority
- (3) FCxA
- (4)*Installation contractor(s)
- (5)*Manufacturer’s representatives
- (6) RDP(s)
- (7) Construction manager/general contractor
- (8) Owner’s technical support personnel
- (9) Facility manager or operations personnel
- (10) Insurance representative
- (11) Third-party test entity
- (12)*AHJ
- (13)*Ita
What Is The Role Of The Installing Contractor?

- The installation contractor responsibilities should include the following:
  - (1) Provide commissioning process requirements and activities as specified in the construction documents.
  - (2) Attend required fire protection and life safety commissioning team meetings.
  - (3) Include or comply with commissioning process milestones in the project schedule.
  - (4) Implement the training program as required by the construction documents.
What Is The Role Of The Installing Contractor?

- (5) Provide submittals to the RDP, owner, and fire protection and life safety commissioning team.
- (6) Develop an individual system test plan, including acceptance and integrated testing.
- (7) Notify the general contractor, third-party test entity, and FCxA when systems are ready for testing.
- (8) Demonstrate the performance of the systems, including integration.
- (9) Complete the construction checklists as the work is accomplished.
- (10) Continuously maintain the record drawings as required by the construction documents.
Ongoing Issues:

- When should commissioning be required?
- When should commissioning of passive fire protection features and systems be required?
  - Standalone?
  - Do different types of barriers warrant different consideration?
    - Overall barrier performance
  - When part of an active system (e.g., smoke control systems)?
    - Confirm leakage values
- What about re-commissioning?
  - NFPA 4 is suggesting a default of every 5 years
    - Impact on existing fire protection features
QUESTIONS AND DISCUSSION