DEB Notice 03/19/09 – Elevator Recall

RE: CPSM Section 701.9.15, ASME/ANSI A17.1, Rule 102.2 (c)(4).

Effective 03/19/09

Delete Section 701.9.15 of the 2004 Edition of the Construction and Professional Services Manual in its entirety. Replace with the following:

The requirements of the *Virginia Uniform Statewide Building Code* (VUSBC), *ASME A17.1, Safety Code for Elevators and Escalators* (ASME A17.1), *NFPA 13: Standard for the Installation of Sprinkler Systems (NFPA 13)*, and *NFPA 72: National Fire Alarm Code (NFPA 72)* are referenced in this application.

Theory

In buildings equipped with fire sprinkler systems VUSBC Section 3006.5 *Shunt trip,* requires the main line power to the affected elevator be disconnected prior to the application of water from the sprinkler system in the elevator machine room and hoistway to avoid unsafe elevator operation. This creates the potential for occupants to be trapped in the elevator if power is disconnected when the elevator doors are closed. The possibility of occupants being trapped can be minimized by properly designing the interface between the elevator controller, fire sprinkler system, and automatic fire detection devices. The objective is to detect the presence of a fire through electronic sensing means in advance of the thermal activation of the sprinkler head. The time differential between these two events should be adequate for the elevator to travel to the recall floor and to allow the occupants to exit the elevator cab before the application of water from the sprinkler head.

The following is the preferred method of achieving the performance objective which is compliant with applicable codes and is acceptable by this office:

1) Provide smoke detectors in locations required by NFPA 72, that when activated will result in Phase I recall as specified in ASME A17.1. If a fire alarm system is present, signal a general alarm.

2) Provide heat detectors, compliant with NFPA 72, placed within 24 inches of sprinkler heads whose flow must disconnect main line power. The heat detectors shall have low temperature setting, such as 135 degrees F, and may include a rate-of-rise function.

3) Activation of a heat detector shall result in the following operations:
   a. Activate the building fire alarm, if present.
   b. Initiate elevator recall.

4) Provide sprinklers only in locations required by NFPA 13. The heads shall be standard response heads, not quick response, and have an intermediate temperature rating of 212 degrees F unless a different rating is warranted by shaft environmental conditions.

5) These heads may be wet supplied directly from the sprinkler system for the respective floor. One sprinkler line may serve the both the machine room and adjacent hoistway of the respective floor, but shall not serve any other non-elevator space. Routing pipes inside the hoistway is shall comply with ASME A17.1.

6) It is acceptable as a design option, but no longer required, to disconnect main line power when the sprinkler head in the pit complies with ASME A17.1.

7) A flow switch, and appropriate means for testing and draining, shall be placed in an accessible location outside of the machine room and/or hoistway where sprinklers are installed. One flow switch may serve both the machine room and hoistway.

8) The flow switch shall not have means to create a time delay; it must activate immediately.

9) Activation of a flow switch shall:
   a. Immediately disconnect main line power.
   b. Activate the building's fire alarm system, if present.