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LA FIRE SPRINKLER ASSOCIATION QUARTERLY MEETING
APRIL 15, 2003
SFM ITEMS OF CONCERN

1 1999 NFPA 13:3-2.1 REQUIREMENT FOR NEW SPRINKLER HEADS IN RENOVATION PROJECTS

Q&A to Dana Haagensen, NFPA 13 Committee:

The referenced code section states, "Only new sprinklers shall be installed." Is it the code's intent to provide new sprinklers in an existing installation where the scope of work is limited to raising or lowering heads for new ceiling treatment? The Handbook commentary does not address this issue.

Response from Dana:

Please be advised that NFPA staff cannot review specific projects in order to determine compliance with NFPA documents or to determine adequacy of a fire protection design. I can only provide my personal understanding of NFPA 13 provisions that may be relevant to your situation.

If a sprinkler project must comply with NFPA 13 (1999), whether it is a new installation, addition, or modification, my understanding is that Section 3-2.1 is intended to require that only new sprinklers be installed. The concern with re-installing an existing sprinkler for a modification is that the sprinkler could be damaged during its removal and that the history of what that sprinkler has been subjected to is unknown.

Please be aware that this response does not constitute a Formal Interpretation as explained in the notice below.

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2 1999 NFPA 13R:2-3.3.1 DOMESTIC DEMAND FOR MULTIPLE BUILDINGS

Q&A to Dana Haagensen, NFPA 13 Committee:

Referencing the above code section, the code refers to, "A common supply main to the building...".

If an apartment project is composed of 10 separate buildings, is the intent of the code to require addition of domestic use for all 10 buildings when proving hydraulics for the one most remote building? One private underground fire main tap is provided to city supply and each building has a single multipurpose tap for domestic/sprinkler use.

If all 10 buildings must be acknowledged when hydraulically proving one, then how do you use Table A-2-3.3.1(b)? Do you compute domestic demand from each building separately then add all 10 together or do you acknowledge the entire 10 building complex as "one building" in which the chart allows significant leniency?

Response from Dana:

Table A-2-3.3.1 of NFPA 13R was intended for sizing multipurpose piping supplying a single building's fire/domestic systems, and is not intended to address sizing of underground fire service mains serving more than one building.

For sizing underground fire service mains, refer to NFPA 24.

Please be aware that this response does not constitute a Formal Interpretation as explained in the notice below.

3 1999 NFPA 13:5-13.1.1 EXCEPTION 8 PROTECTION OF CANOPIES
AND 13:5-13.8.1

Q&A to Dana Haagensen, NFPA 13 Committee:

13:5-13.1.1 Exception 8 allows sprinklers to be omitted in combustible concealed spaces where rigid materials are used and the exposed surfaces have a flame spread of 25 or less and the materials...

13:5-13.8.1 states, "Sprinklers shall be installed under exterior roofs or canopies exceeding 4 feet in width."

The Handbook commentary to 5-13.8.1 (page 325) says that the reference to noncombustible and limited-combustible construction applies to the entire canopy assembly and not just the exposed surface.

Is it the intent of the commentary that it pertains to roofs and canopies with no ceiling cavity? Say we have a canopy constructed completely of non or limited-combustible materials, with the exception of exposed plywood within the ceiling cavity. The plywood receives a coating on site, that complies with 13:5-13.1.1 Exception 8. Seems to me that sprinklers would not be required below the ceiling cavity or within the ceiling cavity. If sprinklers are required because of the plywood, even with a FS 25 coating, are they to be installed below the ceiling cavity and/or within the ceiling cavity?

If 13:5-13.1.1 Exception 8 allows grace for exposed FINISHES for concealed spaces within the occupied building, why wouldn't 13:5-13.8.1 allow same grace for exposed FINISHES for concealed spaces within the canopy cavity?

Response from Dana:

A material that is a 'limited-combustible material', and a material that has a flame spread rating of no more than 25, are not necessarily the same. In addition to a required flame spread rating, a 'limited combustible material' must contain a heat content below a specified threshold in accordance with Section 1-4.2.

The criteria for whether sprinklers can be omitted in a concealed space in an exterior canopy are the same as that for any concealed space, and are specified in Section 5-13.1.1. The criteria for whether sprinklers can be omitted beneath an exterior canopy assembly are specified in Section 5-13.8. The criteria are not the same for these two different types of spaces.

Please be aware that this response does not constitute a Formal Interpretation as explained in the notice below. End of 2-24-03 e-mail.

SFM additional response:

Limited-Combustible Material is defined at NFPA 13:1-4.2:

"As applied to a building construction material, a material not complying with the definition of noncombustible material that, in the form in which it is used, has a potential heat value not exceeding 3500 Btu per lb (8141 kJ/kg) and complies with one of the following, (a) or (b). Materials subject to increase in combustibility or flame spread rating beyond the limits herein established through the effects of age, moisture, or other atmospheric condition shall be considered combustible. (a) Materials having a structural base of noncombustible material, with a surfacing not exceeding a thickness of 1/8 in. (3.2 mm) that has a flame spread rating not greater than 50. (b) Materials, in the form and thickness used, other than as described in (a), having neither a flame spread rating greater than 25 nor evidence of continued progressive combustion and of such composition that surfaces that would be exposed by cutting through the material on any plane would have neither a flame spread rating greater than 25 nor evidence of continued progressive combustion."

Regarding sprinkler protection below the canopy ceiling: Although the canopy is predominately non-combustible construction, the roof's plywood sheathing introduces a combustible material. Based on the definition of Limited-Combustible Material and Mr. Haagensen's response, NFPA 13:5-13.8.1 does not offer any relief for surface treatment of the intumescent coating. The plywood with intumescent coating does not comply with NFPA 13:1-4.2 (a) or (b), therefore,

it has to be considered a combustible material. In accordance with NFPA 13:5-13.8.1, sprinkler protection is required to protect below the canopy.

Regarding sprinkler protection within the canopy cavity: NFPA 13:5-13.1.1 Exception No. 8 allows sprinklers to be omitted from the canopy cavity, provided the plywood is coated with the referenced intumescent coating. The code does not acknowledge or provide relief to partially treat the plywood remote from the building by 4 feet minimum. Therefore, all exposed surfaces of the plywood sheathing shall be protected with the intumescent coating, in order to eliminate sprinkler protection within the cavity.

4 1999 NFPA 20:1-2.2 EMERGENCY TRANSFER SWITCHES AND FIRE PUMP CONTROL PANEL

Designer:

Referenced facility was opened in 1980. It is equipped with one high and one low rise fire pump and control panels also paired with emergency transfer switches, which are connected to the buildings emergency generator system.

The equipment is tested in-house as well as an annual testing and certification of the fire pumps and panel by a certified fire systems company.

We are a proactive company a very conscience of safety issues, and because of that we made a decision to replace the fire pump control panels, based totally on the age of the units. But, we are told that to replace the pump control panel we must also replace the emergency transfer switches. If this is so, we may be forced to replace the equipment at the first sign of trouble and not will in advance of it.

I am hoping that this applies to new construction or addition of emergency back-up systems. Please advise.

SFM:

I am attaching a page from NFPA 20. I do not see a mandatory requirement for replacement of emergency transfer switch when fire pump controller and starter unit are replaced. The intent of this office for maintenance is that replacement "in kind", which is what you propose, does not require compliance with current code - it only requires compliance with code at time of building/sprinkler system construction or substantially renovated. The applicable code is the 1972 edition of NFPA 20. I know the 1999 edition of NFPA 20 is more stringent. If the transfer switch replacement requirement is not in the 1999 edition, then it's not required.

Designer:

The following remarks and codes are the reason that the fire pump vendor feels we would not be in code if we changed the pump controller panels only. As quoted by vendor: NFPA 20:7-1.2.1, 7-8.1.1, 7-8.2.2, 7-8.3.1, 1999 edition.

The vendor believes the transfer switch has to be specifically listed for electric fire pump service. A standard UL listing will not meet this requirement. It must be listed for fire pump service and meet all the requirements of section 7-8.2.2 (Individually listed fire pump controller and power transfer switch).

The standard power transfer switch used for general service is not listed for fire pump service and/or does not meet all the requirements of Chapter 7.

SFM:

Is the current transfer switches listed for fire protection use?

If so, is the vendor saying that new control panels are not compatible with existing transfer switches, when utilizing section 7-8.2.2 (Individually listed fire pump controller and power transfer switch)?

Designer:

The transfer switches in place now are the same one's specified for the fire pumps under the 1972 codes, to look at the switches, the data plates do not indicate if there for "fire pump service" but they are labeled UL rated for Emergency

Systems. I spoke to the Onan tech (the transfer switches are manufactured by Onan) he said Onan told him that at the time that this building was built, the transfer switches were specified by existing codes and amp requirements.

I checked with the vendor about the compatibility. The transfer switches are mechanically compatible to the new pump panels. But until advised differently he is under the impression that the 1999 NFPA 20 (transfer switch needs to be replaced with pump control panel) still applies.

SFM:

In accordance with NFPA 20, 1999 edition, Section 1-2.2, "Where existing pump installations meet the provisions of the standard in effect at the time of purchase, they shall be permitted to remain in use provided they do not constitute a distinct hazard to life or adjoining property."

This office acknowledges the pump controller replacements as "maintenance in kind", which has to comply with codes in effect at time of installation. The referenced facility opened in 1980. In accordance with LAC 55:V:103, the code enforced at that time was the 1973 NFPA 101 Life safety Code, which references the 1972 NFPA 20 Standard on Centrifugal Fire Pumps. The 1972 NFPA 20 offers no mention or requirement for electric transfer switches for dual power sources, much less the requirement for them to be replaced when controller is replaced.

Provided that the existing transfer switches are compatible with the new controllers being replaces, and the transfer switches have been inspected by a SFM licensed sprinkler contractor and found to be in acceptable working order, this office has no requirement to replace the transfer switches simultaneously with the controllers.