

PROPOSAL 8-1 (2009)

SCOPE: Sec. 13.6.8.2, 13.6.8.3, and 23.1

PROPOSAL FOR CHANGE:

1 **Revise the following Sec. 13.6.8.2 to Part 1 of the 2008 Provisions:**

2
3 **13.6.8.2 Fire Protection Sprinkler Systems.**~~in Seismic Design~~
4 **Category C.** ~~In structures assigned to Seismic Design Category C,~~
5 ~~fire~~ Fire protection sprinkler systems designed and constructed in
6 accordance with NFPA 13 shall be deemed to meet the other
7 requirements of this section.
8

9 **Delete the following Sec. 13.6.8.3 to Part 1 of the 2008 Provisions:**

10
11 **13.6.8.3 Fire Protection Sprinkler Systems in Seismic Design**
12 **Categories D through F.** ~~In structures assigned to Seismic Design~~
13 ~~Categories D, E, or F, the following requirements shall be~~
14 ~~satisfied:~~

- 15 1. ~~The hangers and sway bracing of the fire protection sprinkler~~
16 ~~systems shall be deemed to meet the requirements of this~~
17 ~~section if both of the following requirements are satisfied:~~
18 a. ~~The hangers and sway bracing are designed and~~
19 ~~constructed in accordance with NFPA 13.~~
20 b. ~~The force and displacement requirements of Sections~~
21 ~~13.3.1 and 13.3.2 are satisfied.~~
22 2. ~~The fire protection sprinkler system piping itself shall meet the~~
23 ~~force and displacement requirements of Section 13.3.1 and~~
24 ~~13.3.2.~~
25 3. ~~The design strength of the fire protection sprinkler system~~
26 ~~piping for seismic loads in combination with other service~~
27 ~~loads and appropriate environmental effects shall be based on~~
28 ~~the following material properties:~~
29 a. ~~For piping and components constructed with ductile~~
30 ~~materials (e.g., steel, aluminum, or copper), 90 percent~~
31 ~~of the minimum specified yield strength.~~
32 b. ~~For threaded connections in components constructed~~
33 ~~with ductile materials, 70 percent of the minimum~~
34 ~~specified yield strength.~~
35 c. ~~For piping and components constructed with nonductile~~
36 ~~materials (e.g., plastic, cast iron, or ceramics), 10~~

1 percent of the material minimum specified tensile
2 strength.

3
4 **Revise the following Sec. 23.1 to Part 1 of the 2008 Provisions:**

5
6 **NFPA 13**

7 Sections 13.6.5.1, 13.6.8, 13.6.8.2, ~~13.6.8.3~~, 13.6.8.4

8 Standard for the Installation of Sprinkler Systems, ~~including TIA~~
9 ~~02-1 (NFPA 13) (SC 03-7-8/Log No. 748)~~, 2002 2007

10
11 **Commentary to Support Proposal 8-1**

12
13 **Add the following to the Chapter 13 Commentary:**

14
15 **C13.6.8.2 Fire Protection Sprinkler Systems in Seismic Design Category C.** In Seismic
16 Design Category C, the prescriptive requirements of NFPA 13 -2007, using a default lateral
17 force of 50 percent of the weight of the water-filled pipe, provide a conservative design.

18
19 **C13.6.8.3 Fire Protection Sprinkler Systems in Seismic Design Categories D through F.**
20 The lateral design procedures of NFPA 13-2007 have been revised for consistency with the
21 ASCE 7 design approach while retaining traditional sprinkler system design concepts. Using
22 conservative upper-bound values of the various design parameters, a single lateral force
23 coefficient, C_p , was developed. It is a function of the mapped short period response parameter
24 S_s . Stresses in the pipe and connections are controlled by limiting the maximum reaction at
25 bracing points, as function of pipe diameter.

26
27 **REASON FOR PROPOSAL:**

28
29 NFPA 13 has undergone a significant revision which accomplished the
30 following:

- 31
32 1) Incorporated the text from the seismic TIA to the 2002 edition.
33
34 2) Completed the reorganization and changes associated with the work of the
35 seismic task group to ensure compliance with ASCE 7.
36
37 3) Changes included brace spacing, new seismic coefficients to establish
38 maximum loads in Zones of Influence, guidance of bracing of branch lines, and
39 new limits on maximum distances between restraints of branch lines not
40 requiring bracing.

41
42 The 2007 edition of NFPA 13 will be addressed at the NFPA annual meeting in
43 Orlando, FL June 7th and 8th and will be published by the end of September
44 2006. It should be noted that none of the new proposed seismic changes will be
45 challenged on the floor and the changes as presented in the Report on Proposals

1 and Report on Comments will proceed as recommended by the committee and
2 the seismic task group.