



## Tuesday e-Tech Alert January 4, 2005

### **Some recent informal interpretations by the NFSA Engineering staff on the subject of fire pumps:**

**Q:** If a fire pump is equipped with a backflow preventer in the suction piping, where is the proper place to tie in the suction piping for the jockey pump?

**A:** There are two options. The first is to make the connection for the jockey pump between backflow preventer and the main fire pump. In this case, no additional equipment is needed.

The second option is to make the connection between the public water supply and the backflow preventer. In this case, a backflow preventer will also be needed for the jockey pump since it creates a cross-connection between the potable water supply and the sprinkler system. This backflow preventer would need to be the same type (double check or RPZ) as the main backflow preventer.

It should be noted that the existence of a backflow preventer could create conditions to damage a fire pump or cause it to operate ineffectively. NFPA 20 only allows backflow preventers on the suction side of a pump where the friction loss through the backflow device still permits delivery of water to the suction flange of the pump at a positive pressure at full flow (150% of rated flow) and where the backflow preventer is a distance at least ten times the diameter of the pipe away from the pump suction flange.

**Q:** NFPA 20 requires a minimum length of ten times the pipe diameter between an elbow or tee with a centerline plane parallel to the pump shaft and the suction flange of a pump. Can this be met with a vertical section of pipe leading to a vertical elbow directly on the suction flange of the pump?

**A:** Yes. NFPA 20 does not require that the pipe creating distance between the elbow and the pump's suction flange be in the horizontal plane. The purpose of this section of pipe is to allow the flow to stabilize after the elbow with respect to the amount of flow entering the pump's impeller on each side. This stabilization will take place regardless of whether the pipe section is horizontal or vertical. The NFPA Committee on Fire Pumps has clarified this in the 2003 edition of NFPA 20 through the addition of annex Figure A.5.14.6.

**Q:** Can a main fire pump and a jockey pump share a sensing line?

A: No. NFPA 20 has a longstanding requirement (Section 10.5.2.1.6 (B) in the 2003 edition) that there be a pressure sensing line located between each pump's discharge check valve and discharge control valve. Figure A.10.5.2.1 (b) illustrates the arrangement of the sensing lines.

Upcoming NFSA Technical Tuesday Online Seminar:

**NFPA 13 Chapters 1-5 – Fundamentals and Hazard Classification**

**Instructor: Kenneth E. Isman, P.E.**

**Date: January 25, 2005**

This seminar reviews the organization and content of the first five chapters of the sprinkler standard, beginning with the scope and purpose and including a discussion of how the standard can and can't be used. The significance of newer definitions is explained, as well as that of the Owner's Certificate. Hazard classification by both occupancy and commodity is addressed.

Information and registration for this seminar is available at [www.nfsa.org](http://www.nfsa.org).

NOTE: During the first half of 2005, NFSA is devoting its "Technical Tuesday" online seminar series to an in-depth review of the current (2002) edition of NFPA 13. This is your chance to learn from the experts who represent the fire sprinkler industry on the technical committees that write the sprinkler rules. Develop an appreciation for the way in which the material is organized in the 2002 edition while learning more about the background of the rules themselves.

The level of all seminar topics is considered intermediate. Because these seminars are being offered as a complete program on NFPA 13, a 30% discount is available when signing up for all ten seminars in the series.