NFSA
NATIONAL FIRE SPRINKLER ASSOCIATION
The Voice of the Fire Sprinkler Industry

Seminar Information Sheet

Seminar Title: Advanced Hydraulics

Seminar Description: This program covers a wide variety of topics all having to do with making decisions regarding the discharge criteria for sprinklers and nozzles (flow, pressure, number of sprinklers in the design area, location of sprinklers in the design area) for advanced and complex situations in fire sprinkler and water spray systems.

This seminar assumes that the participant knows and understands the meaning of basic hydraulic terms such as density and design area as well as knowing the Hazen-Williams formula for calculating friction loss. Participants not familiar with these terms and formulas are certainly welcome to take the class, but they may find that they need to do more work to keep up. Everyone that comes to the class should bring a calculator with a [y^x] key that they know how to use.

This seminar is an excellent study session for people holding NICET Level II certification in Layout of Water-Based Fire Protection Systems who are preparing to sit for the Level III certification exams. This program will cover information from NFPA 13, NFPA 15 and NFPA 16.

Total Instruction Hours: 8 Contact Hours

Learning Outcomes: At the end of this seminar, the participant will be able to:

1. Calculate the minimum required discharge for sprinklers non-uniformly spaced in a building or room.
2. Formulate the location of sprinklers in the design area in buildings where the sprinklers are non-uniformly spaced.
3. Recognize situations where the Room Design Method is advantageous to use to determine the design area and correctly identify to sprinklers in the design area.
4. Calculate sprinkler systems with sprinklers in small compartments that can be omitted from the calculations.
5. Calculate C-factor for pipe and maximum water supply availability using the Hazen-Williams formula.
6. Calculate friction loss for fluid flow in pipes using the Darcy-Weisbach method of calculation.
7. Recognize where NFPA 15 and NFPA 16 require the use of velocity pressure calculations.
8. Calculate fire sprinkler and water spray systems using the velocity pressure method of calculations.

Seminar Format(s): Lecture with participant exercises interspersed during the day.

Participant Materials: Workbook consisting of seminar slides and exercises.

Assessment Method(s): Interclass discussion and review of exercises.