ISIMET
103 C. J. Wise Parkway
Naples, TX 75568
(866)897-0737 fax (903)897-0740

www.ISIMET.com

Review of NFPA Codes and Standards as they apply to Science Laboratories – August 2005

NFPA 101 Life Safety Code - 2003

9.6.5 Emergency Control

9.6.5.1 A fire alarm and control system, where required by another section of this *Code*, shall be arranged to actuate automatically the control functions necessary to make the protected premises safer for building occupants.

9.6.5.4 Installation of emergency control devices shall be in accordance with *NFPA 72®, National Fire Alarm Code®*. The performance of emergency control functions shall not impair the effective response of all required alarm notification functions.

NFPA 45 Standards on Fire Protection for Laboratories Using Chemicals – 2004 Edition

6.6.3 Emergency Plans.
6.6.3.1 Plans for laboratory emergencies shall be developed, which shall include the following:

(1) Alarm activation
(2) Evacuation and building re-entry procedures
(3) Equipment shutdown procedures or applicable emergency operation
(4) Fire-fighting operations
(5) Non-fire hazards
(6) Information as required by the authority having jurisdiction (AHJ) to allow the emergency responders to develop response tactics

11.2 Storage and Piping Systems.

11.2.3.4 An emergency gas shut-off device in an accessible location at the exit shall be provided in addition to the manual point-of-use valve in each educational and instructional laboratory space that has a piped gas dispensing valve.

Interpretation of the Codes

The use of the term “emergency gas shut-off device” in **NFPA 45** in lieu of the wording “gas shut-off valve” suggests that the authors of the code intended that the means to control the fuel gas piping in emergency instances should require more than a manual shut-off valve. Use of the verbiage “at the exit” further strengthens this argument due to the common design feature of a laboratory whereby more than one means of egress is provided. Practical application prohibits a series of manual valves from performing a common *shut-off* function of a distribution system.

Further, “emergency shut-off device” suggests a *means of control* or “**Emergency Control”** in the event of an emergency. Giving merit to this argument along with extended reliance upon **NFPA 101**, one can speculate that **9.6.5 Emergency Control** should have enforcement over this specific code requirement under **NFPA 45**. Thus, these control devices should be governed by **NFPA 72** as stated in **9.6.5.4** of **Life Safety Code**.

6.6.3 Emergency Plans further strengthens the argument for “ … emergency operation” or the inference “emergency control”. And, if validation of this argument is sustained then the limits of control should not be restricted to gas piping systems but should be expanded to include electrically operated equipment. And, “*Alarm activation*” should be an incorporated feature of the “emergency shut-off device” according to **NFPA 45; 11.2.3.4**.

Conclusion

The ISIMET Control System complies with the requirements of **NFPA 45- 11.2 Storage and Piping Systems** as an emergency gas shut-off device. The system further enables for the emergency control and operation of additional utilities or equipment as may be needed by specific facility design.

Having input terminals that accommodate fire alarm input signaling as well as outputs for transmission of output notification signals demonstrates the effectiveness of the ISIMET systems as a superior means to provide for full compliance with all safety code requirements.

ISIMET Control Systems - Advantages over other available products or designs

Packaged safety control system.

Sole authority to the Instructor to activate utilities.

Emergency activated by integrated panic button assembly.

Multiple means of egress does not limit safety features.

Fire Alarm signaling provides for auto shut-down of all controlled services.

Local emergency reset avoids delays after emergency.

Purge fan activated by emergency.

Automatic after hours shutdown.

System monitoring by building alarm system.

Exhaust & fume hood fans disabled during non-occupied periods.