1. Add new sections to read as follows:

**4.2.1.1.2** For systems that employ the use of a pressure-reducing device, the minimum design pressure for piping downstream of the pressure reducer shall be determined by system flow calculations.

**4.2.1.1.3** Piping for pre-engineered systems shall be designed in accordance with the limitations of the manufacturer’s listed installation manual.

**A.4.2.1.1.2** The pressure reduction of the system discharge may be accomplished through the system’s cylinder valve or through a separate pressure-reducing device.

**A.4.2.1.1.3** Pre-engineered systems are designed to listed limitations which may or may not include values for pressures downstream of pressure reducers.

Submitter’s Substantiation: Inert gas clean agent systems typically are equipped with pressure reducing devices the sole purpose of which is to reduce the gas pressure from the agent storage container to a much lower pressure – a lower pressure which will permit the use of lighter weight pipe and fittings than that which would be required at the pressures in the agent storage container.

The requirements in NFPA 2001 recognize the existence, purpose and utility of pressure reducing devices to permit the use of lighter weight pipe fittings. In paragraph 4.2.3.1, NFPA 2001 (2012) specifies two distinct minimum working pressure ratings to be used for pipe fittings.

“Fittings shall have a minimum rated working pressure equal to or greater than the minimum design working pressure specified in 4.2.1.1 . . . “

“For systems that employ the use of a pressure-reducing device in the distribution piping, the fittings downstream of the device shall have a minimum rated working pressure equal to or greater than the maximum anticipated pressure in the downstream piping.”

Further, in 4.2.1.1.1 which provides specifications for minimum pipe design pressures, the standard states “The pressure reducing device shall be readily identifiable.” Yet, because of the omission which will be discussed below, there is no further reference to the pressure reducing device in the specification of pipe.

NFPA 2001 only specifies one minimum working pressure rating for pipe. The specified minimum rated working pressure for pipe is given in paragraph, 4.2.1.1, 4.2.1.1.1 and the related table 4.2.1.1.1(a). The minimum working pressure rating for pipe is based on the pressure in the agent storage container.

The effect of this dichotomy in pipe and pipe fitting specifications in NFPA 2001 (2012) is for distribution piping downstream of the pressure reducing device, the pipe strength is specified to be on the order of two times (or more) greater than the specified strength of the pipe fittings located downstream of the pressure reducing device. The minimum specified working pressure rating of pipe and pipe fittings should be the same for the same section of the distribution piping network. Pipe and fittings will be subjected to the same pressures. There is no technical justification to require the minimum rated working pressure of pipe to be substantially higher than the minimum rated working pressure of the pipe fittings which connect sections of pipe.

The proposed addition would correct this disparity (and error in NFPA 2001 (2012) and the 2004 and 2008 editions of the standard – see next section) by requiring the minimum design working pressure of the pipe to be based on the same criteria used to determine the minimum design working pressure of the pipe fittings.

Please note that this requirement had previously been approved by the NFPA 2001 technical committee when it accepted in principle Public Comment 2001-5 Log #8 for the 2004 edition of the standard (see attached Report on Comments, 2003 Fall Revision Cycle, pp. 2001-2, -3). The committee took the following action on this public comment:

Committee Meeting Action: Accept in Principle 1. Delete the two columns under the caption Piping Downstream of Pressure Reducer. The caption is also deleted.
2. Add the note with the exception. Editorially make the exception part of the note. The note will read as follows:
   Note: The minimum design pressure for piping downstream of the pressure reducer shall be determined by system flow calculations. Pre-engineered systems are designed to listed limitations which may or may not include values for pressures downstream of pressure reducers.

In the 2004 edition and subsequent editions of NFPA 2001, the columns of the table providing the minimum design working pressure for inert gas piping downstream of the pressure reducing device were deleted per the Technical Committee direction. The note which was to have specified the new minimum design working pressure for pipe downstream of the pressure reducing device was omitted, apparently due to an error during processing for publication.

This TIA would include the material in the Note which was approved by the NFPA 2001 technical committee and inadvertently left out of the standard during the publication process. The TIA recommends placing the approved verbiage as a subsection to 4.2.1.1 for sake of better conformity with the NFPA manual of style.

Emergency Nature: The pipe requirements contained in current UL listings and FM approvals of inert gas systems contradict the NFPA 2001 requirement for distribution pipe downstream of the pressure reducing device. Listings and approvals require pipe grade and size to be based on the maximum pressure downstream of the pressure reducing device from the system flow calculations. Thousands of systems have been installed in accordance with system flow calculations and applicable UL listings and FM approvals, yet many of these may not meet the [erroneous] minimum requirements in Table 4-2.1.1(a). This conflict creates a potential and completely unwarranted liability exposure for the manufacturer and installer of these systems creating an emergency situation that requires immediate correction by NFPA. The fact that NFPA staff has indicated that a Tentative Interim Amendment is the only way to make this correction in NFPA 2001 prior to the next edition further supports the emergency nature of this request.

The specification of pipe with minimum design working pressures far in excess of those required for the pipe fittings, if enforced, would lead to unreasonable and unnecessary cost increases for material and installation in order to meet the unwarranted requirement in NFPA 2001.

Anyone may submit a comment by the closing date indicated above. To submit a comment, please identify the number of the TIA and forward to the Secretary, Standards Council, 1 Batterymarch Park, Quincy, MA 02169-7471.