

**INTERPRETATION IC 15-1992-5 OF
ANSI/ASHRAE STANDARD 15-1992
SAFETY CODE FOR MECHANICAL REFRIGERATION**

June 27, 1993

Request from: Mr. Jim Ward, The Trane Company, 3600 Pammel Creek Road, La Crosse, WI 54601-7599

Reference: This request refers to Subsection 10.4 of Standard 15-1992 concerning pressure relief valves used as pressure vessel protection, and specifically to Subsection 10.4.2.3 (dual relief valve requirements) which reads as follows:

"**10.4.2.3** Pressure vessels of 10 ft³ (0.285 m³) or more internal gross volume shall use a single rupture member or dual pressure-relief valves shall be installed with a three-way valve to allow testing or repair.

A single relief valve may be used on pressure vessels of 10 ft³ (0.285 m³) or more internal gross volume, located on the lowside of the system, which have shut-off valves to isolate them from the rest of the refrigerating system, and when the system is designed to allow pumpdown of the refrigerant charge of the pressure vessel."

Application 1: Assume refrigerant recovery equipment and associated refrigerant storage vessels larger than 10 ft³ that are permanent fixtures in the machinery room. These vessels can be valved off from the recovery equipment and the refrigeration systems being serviced.

1(a) Mr. Ward's letter opines that these vessels require a single rupture disk or dual pressure relief valves with a three-way valve to allow testing and repair.

Question 1(a): Is Mr. Ward's interpretation No. 1(a) correct?

Answer 1(a): Yes

1(b) Mr. Ward's letter opines that a single relief valve may be used under the conditions specified in the second paragraph of 10.4.2.3.

Question 1(b): Is Mr. Ward's interpretation No. 1(b) correct?

Answer 1(b): No

Comment: The second paragraph of 10.4.2.3 deals with vessels on the low side of a system which can be isolated from the rest of the system and can be pumped down. The refrigerant recovery vessel, even when connected to the system, is not considered a low side vessel. Therefore the single relief valve provision does not apply.

Application 2: Assuming a rupture disc/relief valve combination for centrifugal chillers. The chillers are larger than 10 ft³. This disc/valve combination is placed on the low side of the system with relief pressure of 15 psig. The relief valve portion can be removed for inspection/testing without removing the rupture disc. Mr. Ward's letter opines that the chillers in this application require only a single disk/valve combination.

Question 2: Is Mr. Ward's interpretation No. 2 correct?

Answer 2: Yes

Comment: In the example given, the rupture disk is considered the primary relief device. The relief valve connected downstream of the rupture disk is for refrigeration containment should the rupture disk function. The provisions of paragraph 10.2.2 must be met concerning the installation of rupture disk and relief valve combinations.

If the relief valve downstream of the rupture disk is removed and is to be out of the system for a period of time, a spool piece (i.e., temporary piping) should be installed in its place. If the relief valve is removed and no other piping is in its place, the refrigerant will disperse into the room if the rupture disk relieves.