Ohio Administrative Code

Rule 901:5-3-09 Safety relief devices.

Effective: November 18, 1978

(A) Every container used in systems covered by rules 901:5-3-12 to 901:5-3-14 of the Administrative Code shall be provided with one or more safety relief valves of the spring-loaded or equivalent type. The discharge from safety relief valves shall be vented away from the container, upward and unobstructed to the atmosphere. All safety relief valve discharge openings shall have suitable raincaps that will allow free discharge of the vapor and prevent the entrance of water. Provision shall be made for draining condensate which may accumulate. The rate of the discharge shall be in accordance with the provisions of "Appendix A, ANSI K61.1-1972;"

(B) Container safety relief valves shall be set to start-to-discharge as follows, with relations to the design pressure of the container:

Containers	Minimum	Maximum
ASME-U-68, U-69	95%	100%
ASME-U-200, U-201	95%	100%
ASME 1952, 1956, 1959 1962, 1965, 1968 or 1971	95%	100%
API-ASME	95%	100%

(C) Safety relief devices used in systems covered by rules 901:5-3-12 to 901:5-3-14 of the Administrative Code shall be constructed to discharge at not less than the rates required in paragraph (A) before the pressure is in excess of one hundred twenty per cent of the maximum permitted start-to-discharge pressure setting of the device;

(D) Safety relief valves shall be so arranged that the possibility of tampering will be minimized. If the pressure setting adjustment is external, the relief valves shall be provided with means for sealing the adjustment;

(E) Shut-off valves shall not be installed between the safety relief valves and the containers or systems described in rules 901:5-3-12 to 901:5-3-14 of the Administrative Code except that a shut-

off valve may be used where the arrangement of this valve is such as always to afford required capacity flow through the relief valves.

Note: The above exception is made to cover such cases as a threeway valve installed under two safety relief valves, each of which has the required rate of discharge and is so installed as to allow either of the safety valves to be closed off, but does not allow both safety valves to be closed off at the same time. Another exception to this may be where two separate relief valves are installed with individual shut-off valves. In this case, the two shut-off valve stems shall be mechanically interconnected in a manner which will allow full required flow of one safety relief valve at all times. Still another exception is a safety relief valve manifold which allows one valve of two, three, four or more to be closed off and the remaining valve or valves will provide not less than the rate of discharge shown on the manifold nameplate.

(F) Safety relief valves shall have unrestricted access to the vapor space of the container;

(G) Each safety relief valve used with systems described in rules 901:5-3-12 to 901:5-3-14 of the Administrative Code shall be plainly and permanently marked as follows:

(1) With the letters "AA" or the symbol "$NH_{>3}$ ";

(2) The pressure in pounds per square inch gage (psig) at which the valve is set to start-to-discharge;

(3) The rate of discharge of the valve in cubic feet per minute of air at sixty degrees Fahrenheit and atmospheric pressure (14.7 psia);

(4) The manufacturer's name or trademark and catalog number and date of manufacture shall be required on all newly installed relief valves. For example, a safety relief valve marked "AA-250-4200" (air) means that this valve is suitable for use on an anhydrous ammonia container; that it is set to start-to-discharge at two hundred fifty psig; and that its rate of discharge is four thousand two hundred cubic feet per minute of air;

(H) The flow capacity of the safety relief valve shall not be restricted by any connection to it on either the upstream or downstream side;

(I) The manufacturer or supplier of a safety relief valve manifold shall publish complete data showing the flow rating through the combined assembly of the manifold with safety relief valves installed. The manifold flow rating shall be determined by testing the manifold with all but one valve discharging. If one or more openings have restrictions not present in the remaining openings, the restricted opening or openings or those having the lowest flow shall be used to establish the flow rate marked on the manifold nameplate. The marking shall be similar to that required in paragraph (G) for individual valves;

(J) A hydrostatic relief valve shall be installed between each pair of shut-off valves in the liquid ammonia piping or hose where liquid may be trapped so as to relieve into the atmosphere at a safe location, or shut-off valves with internal relief shall be used;

(K) Discharge from safety relief devices shall not terminate in or beneath any building.