1513.0150 CONTAINER APPURTENANCES.

Subpart 1. **Approval.** All appurtenances of each system must be approved in accordance with part 1513.0030, subpart 4.

Subp. 2. **Materials and design.** All appurtenances must be designed for not less than the maximum working pressure of that portion of the system on which they are installed. All appurtenances must be fabricated from materials proved suitable for anhydrous ammonia service.

Subp. 3. **Shut-off valves.** All connections to containers except those for pressure relief devices, thermometer wells, liquid level gauging devices, or those fitted with a No. 54 (0.055 inch) drill size orifice, or those plugged, must have shut-off valves located as close to the container as practical, with the valve installed so that the product in the tank is under the disc holder when the valve is closed. The shut-off valves at the risers must also be installed so that the product in the piping is under the disc holder when the valve is closed. Any other shut-off valves in the piping may be installed either direction, unless the manufacturer specifies otherwise.

Subp. 4. **Excess flow valves.** Excess flow valves must close automatically at the rated flows of vapor or liquid as specified by the manufacturer. The connections and line, including valves and fittings being protected by an excess flow valve, must have a greater capacity than the rated flow of the excess flow valve.

Subp. 5. **Exceptions.**

A. Liquid level gauging devices that require bleeding of the product to the atmosphere, and which are so constructed that outward flow will not exceed that passed by a No. 54 (0.055 inch) drill size opening, need not be equipped with excess flow valves.

B. An opening in a container to which a pressure gauge connection is made need not be equipped with an excess flow valve, if such an opening is not larger than No. 54 (0.055 inch) drill size.

Subp. 6. **Installation.** If an excess flow or back pressure check valve is required by this part, it must be installed directly in the container opening or at a point outside as close as practicable to where the line enters the container. In the latter case the installation must be made in such a manner that any undue strain beyond the excess flow or back pressure check valve will not cause breakage between the container and the valve.

Subp. 7. **By-pass.** An excess flow valve must be designed with a by-pass, not to exceed a No. 60 (0.040 inch) drill size opening, to allow equalization of pressures.

Subp. 8. **Integral excess flow valve.** A shut-off valve with an integral excess flow valve must be designed for proper installation in a container opening so that the excess flow

valve will close in the event that the valve body, extending above the coupling, is sheared or broken off.

Subp. 9. **Markings.** An excess flow valve must be plainly and permanently marked with the name or trademark of the manufacturer, the catalog number, and the rated capacity.

Subp. 10. **Positive shut-off valve.** Each liquid filling connection on nonrefrigerated containers must have a positive shut-off valve in conjunction with either a back-pressure check valve or an excess flow valve. Vapor connections on nonrefrigerated containers must have a positive shut-off valve together with an excess flow valve. The back-pressure check valves or excess flow valves must be installed in the facility prior to the positive shut-off valves.

Subp. 11. **Quick opening valves.** Quick opening (1/4 turn) valves must not be used on transfer lines.

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