**Section 215.40 Tank Appurtenances**

a) All tanks and appurtenances of each system shall be approved by the Department prior to initiation of operations, including the receipt of anhydrous ammonia.

b) All appurtenances shall be designed for no less than the maximum working pressure of the portion of the system on which they are installed. All appurtenances shall be fabricated from materials proved suitable for anhydrous ammonia service.

c) All connections to containers except connections for pressure relief devices, thermometer well, liquid level gauging devices, or connections fitted with No. 54 (0.055 inches) drill size orifice or those plugged shall have shutoff valves located as close to the container as practical.

d) Excess flow valves or approved systems shall close automatically at the rated flows of vapor or liquid as specified by the manufacturer. The piping, including valves and fittings in the same flow path as the excess flow valve, shall have a greater capacity than the rated flow of the excess flow valve or approved system.

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

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

g) Each facility shall provide the minimum protection at each non-refrigerated storage tank opening utilized for the transfer of product as follows:

1) The installation of an:

A) internal valve in the tank with a manual shutoff valve located immediately outside of the opening; or

B) approved excess flow valve or a back check valve inside of the tank, a manual shutoff valve located immediately outside of the opening and an approved emergency shutoff valve (ESV) located within 3 feet of the opening side of the manual shutoff valve.

2) Approved ESVs or internal valves shall incorporate a reliable actuation system that will close all of the ESVs or internal valves of the piping system on the first attempt in the event of emergency or of testing from a remote location. A minimum of 2 remote actuation devices shall be located no less than 25 feet reasonably opposed to each other.

3) If using a pressure source for activation of the ESVs or internal valves, nitrogen, compressed air or carbon dioxide is deemed acceptable. If using compressed air as a pressure source, the air shall be clean and kept at a moisture level that will not prevent the system from operating. Propane or other flammable materials shall be prohibited for use to activate an ESV or an internal valve.

4) ESVs and internal valves shall be tested annually for the functions required. A record of each test result shall be kept at the facility for a minimum of 5 years.

h) Excess flow valves shall be designed with a by-pass, not to exceed a No. 60 (0.040 inches) drill size opening, to allow equalization of pressure.

i) All excess flow valves shall be plainly and permanently marked with the name or trademark of the manufacturer, the catalog number, and the rated capacity.

j) Each filling connection on non-refrigerated containers shall have a positive shutoff valve in conjunction with either an approved internal back-pressure check valve or an approved internal excess flow valve. Vapor connections on non-refrigerated containers shall have a positive shutoff valve together with an approved internal excess flow.

(Source: Amended at 40 Ill. Reg. 8704, effective July 1, 2016)