

INTERPRETATION: IIAR SC 2016-3
SUBJECT: IIAR 2-2014 Chapter 14 and other related chapters and sections
DATE ISSUED: March 10, 2017

QUESTION 1:

Note:

The responses here apply to packaged systems that require a machinery room in accordance with Chapter 4. Packaged systems permitted to be located outside a machinery room in accordance with Chapter 4 need to comply with Chapter 7.

- a. Does the package system with enclosure need to meet 6.11 – Lighting?

ANSWER: Yes, if it is intended for occupancy during maintenance.

- b. Does the package system with enclosure need to meet 6.12 – Emergency Control Switches?

ANSWER: Yes, unless the enclosure is designed to mitigate possible deflagrations by use of explosion proof electrical equipment or other engineered and/or administrative controls.

- c. Does the package system with enclosure need to meet 6.13 – Ammonia Detection and Alarm?

ANSWER: Yes, unless the enclosure is designed to mitigate possible deflagrations by use of explosion proof electrical equipment or other engineered and/or administrative controls.

- d. What parts of 6.14, Ventilation, do package systems with enclosures need to meet?

- i. 6.14.6, Temperature Control Ventilation, does a packaged system with enclosure need to meet the 104oF upper room temperature?

ANSWER: Yes, unless electrical equipment is specially rated for high temperature operation.

- ii. 6.14.7, Emergency Ventilation

ANSWER: Yes, unless the enclosure is designed to mitigate possible deflagrations by use of explosion proof electrical equipment. or other engineered and/or administrative controls.

QUESTION 2:

14.1.3: “Packaged systems located outside that are not designed for human occupancy shall not require ventilation”.

Note:

If packages are not enclosed, i.e. they meet the free aperture requirements of 7.3.2 they need not be provided with ventilation.

- a. What if the system has an enclosure?

ANSWER: If the packages are enclosed, they would still require ventilation unless the enclosure is designed to mitigate possible deflagrations by use of explosion proof electrical equipment or other engineered and/or administrative controls.

- b. How do 6.14.7.1 (Emergency Ventilation) and 7.3.1.2.1 (Emergency Mechanical Ventilation and Exception) exceptions related to concentrations not potentially reaching 40,000 ppm apply to 14.1.3?

ANSWER: The exception would be applicable if the release of the entire charge of the largest single circuit of the system would not exceed a concentration of 40,000 ppm, based on the volume of the package enclosure. Volume calculations shall be compliant with section 5.3.

QUESTION 3:

Why is there a 100 hp upper limit in Section 7.3 Ventilation? Should this be based on charge?

ANSWER: Exceeding 100 hp requires equipment (other than evaporators or condensers used for heating) to be located outdoors or in a machinery room, per chapter 4. The 100 hp exception is provided in 4.2.3, item 5. However, if a system of less than 100 hp is used in a room (or enclosure) wherein 25% of the LFL will be exceeded upon loss of the entire charge of the largest independent circuit, ventilation must be provided.

QUESTION 4:

Manually operated louvers are proposed to provide heat removal in the summer and ventilation for ammonia releases. Can the louvers be closed in the winter without violating section 7.3.1.2.1?

ANSWER: No, because they are manually operated. If they automatically open based on heat removal or vapor removal, then they could be closed in the winter.

QUESTION 5:

The main issue we are having is implementing 14.1.2, which requires packaged systems to meet the applicable provisions of chapters 4 – 7. Which provisions in Chapter 6, Machinery Room, are applicable to Chapter 14, Packaged Systems and Equipment?

ANSWER: The provisions of chapter 4 direct the use of a machinery room (or outdoor locations). If a packaged system is fitted with a compressor capacity of 100 hp or more, and is enclosed, it shall meet the ventilation requirements of chapter 6 (which provides the option of no ventilation if classified electrical equipment is used). If it is also intended for occupancy, it shall also be provided with other applicable provisions of machinery rooms intended for safety (lighting, emergency door hardware, signage, eyewash/safety shower and etc.) because it will be considered a machinery room, regardless of its physical location (attached to a building, on the roof, or standing alone near a building).

COMMITTEE ACTION:

The Standards Committee believes that the current text has an error and could provide better clarity. It will require revision to make the answers outlined above clear.