YORK®
BY JOHNSON CONTROLS

Service Information

File In/With: N/A	SI0269
	New 1012
Equipment Affected: YVAA Chillers	

FREEZE PROTECTION OF A YVAA EVAPORATOR

PROBLEM

Proper winterization of YVAA evaporators during months where freezing may occur is critical to protecting against freeze damage.

SOLUTION

If a YVAA evaporator will be exposed to freezing temperatures, the following steps must be taken:

1. If the chilled liquid is water or a glycol mixture unable to provide evaporator freeze protection at ambients down to 0°F (-18°C), and it is certain electric power will always be available to all of the heaters, and the evaporator is to remain filled, validate operation of the mat heater. The mat heater (unit power) provides freeze protection down to 0°F (-18°C). The optional insertion heater (separate power source) provides protection down to -20°F (-30°C).
2. If the ambient temperature can fall below 0°F (-18°C) (-20°F (-30°C) with optional insertion heaters) or it is not certain electric power will always be available to all of the heaters, the evaporator must be drained. Before draining, turn off power to the unit to de-energize the heater mat and disconnect the separate power source if the optional insertion heater is installed. Properly isolate the evaporator from the chilled liquid system and then drain the evaporator using the drain valves on each end of the evaporator waterboxes (dispose of system water properly). Close the drain valves and fill the evaporator with a glycol and water solution concentration suitable for 15°F to 20°F (8°C to 11°C) below the lowest expected ambient temperature. The glycol solution may be left in place during freezing temperatures or it may be removed (leaving a residual amount in the tubes). If the glycol solution is removed, the drains must remain open. When preparing the unit to be restarted, the evaporator may be flushed to avoid possible contamination of the chilled liquid. Whenever removing or installing glycol, follow all applicable precautions for use and safe disposal.
3. Draining the evaporator is the recommended process. Unforeseen power interruptions can allow for freezing of the evaporator in a very short time if the temperatures are extremely low.
4. Before startup, validate the presence of refrigerant pressure in each circuit prior to refilling the evaporator. Re-energize all heater(s).

Product Technical Support

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