**Section 653.804 Heat Exchange Cross-Connections**

a) Instantaneous water heaters or water storage heaters using shell and tube design steam-fired heat exhangers shall be acceptable for heating water for domestic use under the following conditions:

1) The purity of the steam supplied to the heat exchangers shall meet United States Food and Drug Administration (USFDA) requirements for steam that may contact food. Boiler water and steam condensate additives shall meet requirements of USFDA regulation 21 CFR 173.310 (1983).

2) Double check-valve assembly meeting requirements of Section 653.801(d) shall be installed in the cold water inlet piping of the heat exchanger. The unit shall be tested annually and required service performed within 15 days.

3) A maintenance log shall be maintained and include the information specified in Section 653.802(e)(4).

b) Instantaneous water heaters and water storage heaters using shell and tube design hot water boiler-fired heat exhangers shall be acceptable for heating water for domestic use under the following conditions:

1) Chemical additives to control corrosion and scale of the hot water boiler system shall not contain toxic chemicals (e.g., chromate or nitrite based inhibitors).

A) Chemicals approved by United States Environmental Protection Agency (USEPA) or USFDA which will not breakdown to harmful substances in the system may be applied for scale and corrosion control in public water supplies (e.g., food grade caustic soda, sodium silicate, sodium polyphosphate).

B) The addition of sodium sulfite as an oxygen scavenger in hot water boilers is acceptable when approved double check-valves, in compliance with Section 653.801(d), are installed.

2) A double check-valve assembly, in compliance with Section 653.801(d), shall be installed in the cold water inlet piping of the heat exchanger.

A) The unit shall be tested annually and required service performed within 15 days.

B) A maintenance log shall be maintained and include information specified in Section 653.802(e)(4).

(Source: Amended at 9 Ill. Reg. 17367, effective October 23, 1985)