SECTION 23 57 19 – SHELL AND TUBE HEAT EXCHANGERS

PART 1 - GENERAL

PART 2 - PRODUCTS

2.1 GENERAL

A. All materials shall meet or exceed all applicable referenced standards, federal, state and local requirements, and conform to codes and ordinances of authorities having jurisdiction.

2.2 MANUFACTURERS

A. Armstrong.
B. ITT Bell & Gossett.
C. Taco.
D. Approved Equal.

2.3 STEAM - LIQUID HEAT EXCHANGERS

A. Provide shell and tube type heat exchangers with removable U-bend tube bundle, steam in shell, water in tubes, with capacity and passes scheduled on the Drawings.

B. Construct in conformance with ASME code for unfired pressure vessels. Tube (water) side shall be rated for 150 psi minimum water pressure at 375 degrees F (design rating). Shell (steam) side shall be rated for 150 psi minimum water pressure at 375 degrees F (design rating). Certify by an authorized inspector holding a national board of boiler and pressure vessel inspector’s commission.

C. Shell:
1. Steel with threaded or flanged pipe connections, steel mounting saddles.
2. Steel tube sheets and tube supports.

D. Heads: Cast iron or steel.

E. Tubes: U-tube, ¾ inch minimum outside diameter, seamless copper with minimum wall thickness of .049”, removable for inspection and cleaning.

F. Trim:
1. Provide vacuum breakers with heat exchangers.

G. Sizing of the heat exchanger shall be based on a pressure of 2 psi at the steam connection.
2.4 LIQUID – LIQUID HEAT EXCHANGERS

A. Provide shell and tube type heat exchanger with removable U-bend tube bundle, heated water in shell, primary water in tubes, with capacity and passes scheduled on the Drawings.

B. Construct in conformance with ASME Code for Unfired Pressure Vessels. Tube (primary) side and shell (heated) side shall be rated for 150 psi minimum water pressure at 375 degrees F (design rating). Certify by an authorized inspector holding a National Board of Boiler and Pressure Vessel inspectors commission.

C. Shell:
   1. Steel with threaded or flanged pipe connections, steel mounting saddles.
   2. Steel tube sheets and tube supports.

D. Heads: Cast iron or steel.

E. Tubes: U-tube type, ¼ inch minimum outside diameter, seamless copper with minimum wall thickness of .035", removable for inspection and cleaning.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation shall be in accordance with manufacturer’s published recommendations.

B. Install to permit removal of tube bundle with minimum disturbance to installed equipment and piping.

C. Support heat exchangers on welded steel pipe and angle floor stand.

D. Pitch shell to completely drain condensate.

E. Pipe relief valves and drain valves to nearest floor drain.

F. Provide a minimum of two (2) steam traps in parallel or as detailed on Drawings.

END OF SECTION 23 57 19

This section of the U of I Facilities Standards establishes minimum requirements only. It should not be used as a complete specification.